

The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 353. --Vol. XII.]

LONDON: SATURDAY, MAY 28, 1842.

[PRICE 6D.]

MINE MATERIALS AND COUNTING-HOUSE FURNITURE.—Mr. TIPPET is instructed to sell, BY PUBLIC AUCTION, on Monday, the 28th day of May instant, and following day at Ten o'clock in the forenoon of each day precisely, at WHEAL KITTY MINE, in the parish of St. Agnes, the following valuable MINE MATERIALS, viz.—One STEAM-ENGINE, 40-horse power, with two boilers (about twenty-two tons) complete, one steam engine, 20-horse power, with one boiler (about ten tons) complete, one steam engine, 10-horse power, with one boiler (about five tons) complete, one steam engine, 5-horse power, with one boiler (about two tons) complete, one steam engine, 2-horse power, with one boiler (about one ton) complete, one steam engine, 1-horse power, with one boiler (about half a ton) complete, one steam engine, 1/2-horse power, with one boiler (about half a ton) complete, one steam engine, 1/4-horse power, with one boiler (about half a ton) complete, one steam engine, 1/8-horse power, with one boiler (about half a ton) complete, one steam engine, 1/16-horse power, with one boiler (about half a ton) complete, one steam engine, 1/32-horse power, with one boiler (about half a ton) complete, one steam engine, 1/64-horse power, with one boiler (about half a ton) complete, one steam engine, 1/128-horse power, with one boiler (about half a ton) complete, one steam engine, 1/256-horse power, with one boiler (about half a ton) complete, one steam engine, 1/512-horse power, with one boiler (about half a ton) complete, one steam engine, 1/1024-horse power, with one boiler (about half a ton) complete, one steam engine, 1/2048-horse power, with one boiler (about half a ton) complete, one steam engine, 1/4096-horse power, with one boiler (about half a ton) complete, one steam engine, 1/8192-horse power, with one boiler (about half a ton) complete, one steam engine, 1/16384-horse power, with one boiler (about half a ton) complete, one steam engine, 1/32768-horse power, with one boiler (about half a ton) complete, one steam engine, 1/65536-horse power, with one boiler (about half a ton) complete, one steam engine, 1/131072-horse power, with one boiler (about half a ton) complete, one steam engine, 1/262144-horse power, with one boiler (about half a ton) complete, one steam engine, 1/524288-horse power, with one boiler (about half a ton) complete, one steam engine, 1/1048576-horse power, with one boiler (about half a ton) complete, one steam engine, 1/2097152-horse power, with one boiler (about half a ton) complete, one steam engine, 1/4194304-horse power, with one boiler (about half a ton) complete, one steam engine, 1/8388608-horse power, with one boiler (about half a ton) complete, one steam engine, 1/16777216-horse power, with one boiler (about half a ton) complete, one steam engine, 1/33554432-horse power, with one boiler (about half a ton) complete, one steam engine, 1/67108864-horse power, with one boiler (about half a ton) complete, one steam engine, 1/134217728-horse power, with one boiler (about half a ton) complete, one steam engine, 1/268435456-horse power, with one boiler (about half a ton) complete, one steam engine, 1/536870912-horse power, with one boiler (about half a ton) complete, one steam engine, 1/1073741824-horse power, with one boiler (about half a ton) complete, one steam engine, 1/2147483648-horse power, with one boiler (about half a ton) complete, one steam engine, 1/4294967296-horse power, with one boiler (about half a ton) complete, one steam engine, 1/8589934592-horse power, with one boiler (about half a ton) complete, one steam engine, 1/17179869184-horse power, with one boiler (about half a ton) complete, one steam engine, 1/34359738368-horse power, with one boiler (about half a ton) complete, one steam engine, 1/68719476736-horse power, with one boiler (about half a ton) complete, one steam engine, 1/137438953472-horse power, with one boiler (about half a ton) complete, one steam engine, 1/274877906944-horse power, with one boiler (about half a ton) complete, one steam engine, 1/549755813888-horse power, with one boiler (about half a ton) complete, one steam engine, 1/1099511627776-horse power, with one boiler (about half a ton) complete, one steam engine, 1/2199023255552-horse power, with one boiler (about half a ton) complete, one steam engine, 1/4398046511104-horse power, with one boiler (about half a ton) complete, one steam engine, 1/8796093022208-horse power, with one boiler (about half a ton) complete, one steam engine, 1/17592186044416-horse power, with one boiler (about half a ton) complete, one steam engine, 1/35184372088832-horse power, with one boiler (about half a ton) complete, one steam engine, 1/70368744177664-horse power, with one boiler (about half a ton) complete, one steam engine, 1/140737488355328-horse power, with one boiler (about half a ton) complete, one steam engine, 1/281474976710656-horse power, with one boiler (about half a ton) complete, one steam engine, 1/562949953421312-horse power, with one boiler (about half a ton) complete, one steam engine, 1/1125899906842624-horse power, with one boiler (about half a ton) complete, one steam engine, 1/2251799813685248-horse power, with one boiler (about half a ton) complete, one steam engine, 1/4503599627370496-horse power, with one boiler (about half a ton) complete, one steam engine, 1/9007199254740992-horse power, with one boiler (about half a ton) complete, one steam engine, 1/18014398509481984-horse power, with one boiler (about half a ton) complete, one steam engine, 1/36028797018963968-horse power, with one boiler (about half a ton) complete, one steam engine, 1/72057594037927936-horse power, with one boiler (about half a ton) complete, one steam engine, 1/144115188075855872-horse power, with one boiler (about half a ton) complete, one steam engine, 1/288230376151711744-horse power, with one boiler (about half a ton) complete, one steam engine, 1/576460752303423488-horse power, with one boiler (about half a ton) complete, one steam engine, 1/1152921504606846976-horse power, with one boiler (about half a ton) complete, one steam engine, 1/2305843009213693952-horse power, with one boiler (about half a ton) complete, one steam engine, 1/4611686018427387904-horse power, with one boiler (about half a ton) complete, one steam engine, 1/9223372036854775808-horse power, with one boiler (about half a ton) complete, one steam engine, 1/18446744073709551616-horse power, with one boiler (about half a ton) complete, one steam engine, 1/36893488147419103232-horse power, with one boiler (about half a ton) complete, one steam engine, 1/73786976294838206464-horse power, with one boiler (about half a ton) complete, one steam engine, 1/147573952589676412928-horse power, with one boiler (about half a ton) complete, one steam engine, 1/295147905179352825856-horse power, with one boiler (about half a ton) complete, one steam engine, 1/590295810358705651712-horse power, with one boiler (about half a ton) complete, one steam engine, 1/1180591620717411303424-horse power, with one boiler (about half a ton) complete, one steam engine, 1/2361183241434822606848-horse power, with one boiler (about half a ton) complete, one steam engine, 1/4722366482869645213696-horse power, with one boiler (about half a ton) complete, one steam engine, 1/9444732965739290427392-horse power, with one boiler (about half a ton) complete, one steam engine, 1/18889465931478580854784-horse power, with one boiler (about half a ton) complete, one steam engine, 1/37778931862957161709568-horse power, with one boiler (about half a ton) complete, one steam engine, 1/75557863725914323419136-horse power, with one boiler (about half a ton) complete, one steam engine, 1/151115727451828646838272-horse power, with one boiler (about half a ton) complete, one steam engine, 1/302231454903657293676544-horse power, with one boiler (about half a ton) complete, one steam engine, 1/604462909807314587353088-horse power, with one boiler (about half a ton) complete, one steam engine, 1/1208925819614629174706176-horse power, with one boiler (about half a ton) complete, one steam engine, 1/2417851639229258349412352-horse power, with one boiler (about half a ton) complete, one steam engine, 1/4835703278458516698824704-horse power, with one boiler (about half a ton) complete, one steam engine, 1/9671406556917033397649408-horse power, with one boiler (about half a ton) complete, one steam engine, 1/19342813113834066795298816-horse power, with one boiler (about half a ton) complete, one steam engine, 1/38685626227668133590597632-horse power, with one boiler (about half a ton) complete, one steam engine, 1/77371252455336267181195264-horse power, with one boiler (about half a ton) complete, one steam engine, 1/154742504910672534362390528-horse power, with one boiler (about half a ton) complete, one steam engine, 1/309485009821345068724781056-horse power, with one boiler (about half a ton) complete, one steam engine, 1/618970019642690137449562112-horse power, with one boiler (about half a ton) complete, one steam engine, 1/1237940039285380274899124224-horse power, with one boiler (about half a ton) complete, one steam engine, 1/2475880078570760549798248448-horse power, with one boiler (about half a ton) complete, one steam engine, 1/4951760157141521099596496896-horse power, with one boiler (about half a ton) complete, one steam engine, 1/9903520314283042199192993792-horse power, with one boiler (about half a ton) complete, one steam engine, 1/19807040628566084398385987584-horse power, with one boiler (about half a ton) complete, one steam engine, 1/39614081257132168796771975168-horse power, with one boiler (about half a ton) complete, one steam engine, 1/79228162514264337593543950336-horse power, with one boiler (about half a ton) complete, one steam engine, 1/158456325028528675187087900672-horse power, with one boiler (about half a ton) complete, one steam engine, 1/316912650057057350374175801344-horse power, with one boiler (about half a ton) complete, one steam engine, 1/633825300114114700748351602688-horse power, with one boiler (about half a ton) complete, one steam engine, 1/1267650600228229401496703205376-horse power, with one boiler (about half a ton) complete, one steam engine, 1/2535301200456458802993406410752-horse power, with one boiler (about half a ton) complete, one steam engine, 1/5070602400912917605986812821504-horse power, with one boiler (about half a ton) complete, one steam engine, 1/10141204801825835211973625643008-horse power, with one boiler (about half a ton) complete, one steam engine, 1/20282409603651670423947251286016-horse power, with one boiler (about half a ton) complete, one steam engine, 1/40564819207303340847894502572032-horse power, with one boiler (about half a ton) complete, one steam engine, 1/81129638414606681695789005144064-horse power, with one boiler (about half a ton) complete, one steam engine, 1/162259276829213363391778010288128-horse power, with one boiler (about half a ton) complete, one steam engine, 1/324518553658426726783556020576256-horse power, with one boiler (about half a ton) complete, one steam engine, 1/649037107316853453567112041152512-horse power, with one boiler (about half a ton) complete, one steam engine, 1/1298074214633706907134224082305024-horse power, with one boiler (about half a ton) complete, one steam engine, 1/2596148429267413814268448164610048-horse power, with one boiler (about half a ton) complete, one steam engine, 1/5192296858534827628536896329220096-horse power, with one boiler (about half a ton) complete, one steam engine, 1/10384593717069655257073792658440192-horse power, with one boiler (about half a ton) complete, one steam engine, 1/20769187434139310514147585316880384-horse power, with one boiler (about half a ton) complete, one steam engine, 1/41538374868278621028295170633760768-horse power, with one boiler (about half a ton) complete, one steam engine, 1/83076749736557242056590341267521536-horse power, with one boiler (about half a ton) complete, one steam engine, 1/166153499473114484113180682535043072-horse power, with one boiler (about half a ton) complete, one steam engine, 1/332306998946228968226361365070086144-horse power, with one boiler (about half a ton) complete, one steam engine, 1/664613997892457936452722730140172288-horse power, with one boiler (about half a ton) complete, one steam engine, 1/1329227995784915872905445460280344576-horse power, with one boiler (about half a ton) complete, one steam engine, 1/2658455991569831745810890920560689152-horse power, with one boiler (about half a ton) complete, one steam engine, 1/5316911983139663491621781841121378304-horse power, with one boiler (about half a ton) complete, one steam engine, 1/10633823966279326983243563682242756608-horse power, with one boiler (about half a ton) complete, one steam engine, 1/21267647932558653966487127364485513216-horse power, with one boiler (about half a ton) complete, one steam engine, 1/42535295865117307932974254728971026432-horse power, with one boiler (about half a ton) complete, one steam engine, 1/85070591730234615865948509457942052864-horse power, with one boiler (about half a ton) complete, one steam engine, 1/170141183460469231731897018915884105728-horse power, with one boiler (about half a ton) complete, one steam engine, 1/340282366920938463463794037831768211456-horse power, with one boiler (about half a ton) complete, one steam engine, 1/680564733841876926927588075663536422912-horse power, with one boiler (about half a ton) complete, one steam engine, 1/1361129467683753853855176151327072845824-horse power, with one boiler (about half a ton) complete, one steam engine, 1/2722258935367507707710352302654145691648-horse power, with one boiler (about half a ton) complete, one steam engine, 1/5444517870735015415420704605308291383296-horse power, with one boiler (about half a ton) complete, one steam engine, 1/10889035741470030830841409210616582766592-horse power, with one boiler (about half a ton) complete, one steam engine, 1/21778071482940061661682818421233165533184-horse power, with one boiler (about half a ton) complete, one steam engine, 1/43556142965880123323365636842466331066368-horse power, with one boiler (about half a ton) complete, one steam engine, 1/87112285931760246646731273684932662132736-horse power, with one boiler (about half a ton) complete, one steam engine, 1/174224571863520493293462547369853242665472-horse power, with one boiler (about half a ton) complete, one steam engine, 1/348449143727040986586925094739706485330944-horse power, with one boiler (about half a ton) complete, one steam engine, 1/696898287454081973173850189479412970661888-horse power, with one boiler (about half a ton) complete, one steam engine, 1/1393796574908163946347700378958825941323776-horse power, with one boiler (about half a ton) complete, one steam engine, 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1/713623846352979940530022594026918881957773312-horse power, with one boiler (about half a ton) complete, one steam engine, 1/1427247692705959881060045188053837763915546624-horse power, with one boiler (about half a ton) complete, one steam engine, 1/2854495385411919762120090376107675527831093248-horse power, with one boiler (about half a ton) complete, one steam engine, 1/5708990770823839524240180752215351055662186496-horse power, with one boiler (about half a ton) complete, one steam engine, 1/11417981541647679048480361504430702111324372992-horse power, with one boiler (about half a ton) complete, one steam engine, 1/22835963083295358096960723008861404222648745984-horse power, with one boiler (about half a ton) complete, one steam engine, 1/45671926166590716193921446017722808445297491968-horse power, with one boiler (about half a ton) complete, one steam engine, 1/91343852333181432387842892035445616890594983936-horse power, with one boiler (about half a ton) complete, one steam engine, 1/18268770466636286477568578407089123378118987872-horse power, with one boiler (about half a ton) complete, one steam engine, 1/36537540933272572955137156814178246756237975744-horse power, with one boiler (about half a ton) complete, one steam engine, 1/73075081866545145910274313628356493512475951488-horse power, with one boiler (about half a ton) complete, one steam engine, 1/146150163733090291820548627256712987024951902976-horse power, with one boiler (about half a ton) complete, one steam engine, 1/292300327466180583641097254513425974049903805952-horse power, with one boiler (about half a ton) complete, one steam engine, 1/584600654932361167282194509026851948099807611904-horse power, with one boiler (about half a ton) complete, one steam engine, 1/1169201309864722334564389018053703696199615223808-horse power, with one boiler (about half a ton) complete, one steam engine, 1/2338402619729444669128778036107407392399230447616-horse power, with one boiler (about half a ton) complete, one steam engine, 1/4676805239458889338257556072214814787798460895232-horse power, with one boiler (about half a ton) complete, one steam engine, 1/9353610478917778676515112144429629575596921790464-horse power, with one boiler (about half a ton) complete, one steam engine, 1/18707220957835557353030224288859259151193843580928-horse power, with one boiler (about half a ton) complete, one steam engine, 1/37414441915671114706060448577718518302387687161856-horse power, with one boiler (about half a ton) complete, one steam engine, 1/74828883831342229412120897155437036604775374323712-horse power, with one boiler (about half a ton) complete, one steam engine, 1/149657767662684458824241794310874073209550748647424-horse power, with one boiler (about half a ton) complete, one steam engine, 1/299315535325368917648483588621748146419101497294848-horse power, with one boiler (about half a ton) complete, one steam engine, 1/598631070650737835296967177243496292838202994589696-horse power, with one boiler (about half a ton) complete, one steam engine, 1/1197262141301475670593934354486992585676405989179392-horse power, with one boiler (about half a ton) complete, one steam engine, 1/2394524282602951341187868708973985171352811979358784-horse power, with one boiler (about half a ton) complete, one steam engine, 1/4789048565205902682375737417947970342705623958717568-horse power, with one boiler (about half a ton) complete, one steam engine, 1/9578097130411805364751474835895940685411247917435136-horse power, with one boiler (about half a ton) complete, one steam engine, 1/19156194260823610729502949671791881370822495834870272-horse power, with one boiler (about half a ton) complete, one steam engine, 1/38312388521647221459005899343583762741644911669740544-horse power, with one boiler (about half a ton) complete, one steam engine, 1/76624777043294442918011798687167525483289823339481088-horse power, with one boiler (about half a ton) complete, one steam engine, 1/153249554086588885836023597374335050966579646678962176-horse power, with one boiler (about half a ton) complete, one steam engine, 1/306499108173177771672047194748670101933159293357924352-horse power, with one boiler (about half a ton) complete, one steam engine, 1/612998216346355543344094389497340203866318586715848704-horse power, with one boiler (about half a ton) complete, one steam engine, 1/122599643269271108668818877899468040773263717343167408-horse power, with one boiler (about half a ton) complete, one steam engine, 1/245199286538542217337637755798936081546527434686334816-horse power, with one boiler (about half a ton) complete, one steam engine, 1/490398573077084434675275511597872163093054869372669632-horse power, with one boiler (about half a ton) complete, one steam engine, 1/980797146154168869350551023195744326186109738745339264-horse power, with one boiler (about half a ton) complete, one steam engine, 1/1961594292288337738701102046391488652372219477506678528-horse power, with one boiler (about half a ton) complete, one steam engine, 1/3923188584576675477402204092782977304744438955013357056-horse power, with one boiler (about half a ton) complete, one steam engine, 1/7846377169153350954804408185565954609488877910026714112-horse power, with one boiler (about half a ton) complete, one steam engine, 1/15692754338306701909608816371131909218977755820053428224-horse power, with one boiler (about half a ton) complete, one steam engine, 1/31385508676613403819217632742263818437955511640106856448-horse power, with one boiler (about half a ton) complete, one steam engine, 1/62771017353226807638435265484527636875911023280213712896-horse power, with one boiler (about half a ton) complete, one steam engine, 1/125542034706453615276870530969055273751822046560427425792-horse power, with one boiler (about half a ton) complete, one steam engine, 1/251084069412907230553741061938110547503644093120854851584-horse power, with one boiler (about half a ton) complete, one steam engine, 1/502168138825814461107482123876221095007288186241709703168-horse power, with one boiler (about half a ton) complete, one steam engine, 1/1004336277651628922214964257752442190014572372483419406336-horse power, with one boiler (about half a ton) complete, one steam engine, 1/2008672555303257844429928515504884380029144744966838812672-horse power, with one boiler (about half a ton) complete, one steam engine, 1/4017345110606515688859857031009768760058289489933677625344-horse power, with one boiler (about half a ton) complete, one steam engine, 1/8034690221213031377719714062019537520116578979867355250688-horse power, with one boiler (about half a ton) complete, one steam engine, 1/16069380442426062755439428124039075040233157959734710501376-horse power, with one boiler (about half a ton) complete, one steam engine, 1/32138760884852125510878856248078150080466315919469421002752-horse power, with one boiler (about half a ton) complete, one steam engine, 1/64277521769704251021757712496156300160932631838938842005504-horse power, with one boiler (about half a ton) complete, one steam engine, 1/128555043539408502043515424992312600321865263677877684011008-horse power, with one boiler (about half a ton) complete, one steam engine, 1/257110087078817004087030849984625200643730527355755368022016-horse power, with one boiler (about half a ton) complete, one steam engine, 1/514220174157634008174061699969250401287461054711510736044032-horse power, with one boiler (about half a ton) complete, one steam engine, 1/1028440348315268016348123399938500802574922109423021472088064-horse power, with one boiler (about half a ton) complete, one steam engine, 1/2056880696630536032696246799877001605149844218846042944176128-horse power, with one boiler (about half a ton) complete, one steam engine, 1/4113761393261072065392493599754003210299688437692085888352256-horse power, with one boiler (about half a ton) complete, one steam engine, 1/8227522786522144130784987199508006420599376875384171776704512-horse power, with one boiler (about half a ton) complete, one steam engine, 1/16455045573044288261569974399016012841198753750768343553409024-horse power, with one boiler (about half a ton) complete, one steam engine, 1/32910091146088576523139948798032025682397507501536687106818048-horse power, with one boiler (about half a ton) complete, one steam engine, 1/65820182292177153046279897596064051364795015003073374213636096-horse power, with one boiler (about half a ton) complete, one steam engine, 1/131640364584354306092559795192128102729590030006146748427272192-horse power, with one boiler (about half a ton) complete, one steam engine, 1/263280729168708612185119590384256205459180060012293496854544384-horse power, with one boiler (about half a ton) complete, one steam engine, 1/526561458337417224370239180768512410918360120024586993709088768-horse power, with one boiler (about half a ton) complete, one steam engine, 1/1053122916674834448740478361537024821836720240049173987418177536-horse power, with one boiler (about half a ton) complete, one steam engine, 1/2106245833349668897480956723074049643673440480098347974836355072-horse power, with one boiler (about half a ton) complete

LAW INTELLIGENCE.

ROYAL POLBHEM MINING COMPANY—APPEAL CASE.

STANWORTH COURT, DUCHY OF CORNWALL—MAY 21.
THOMAS V. VICE AND HENRY.—At a few minutes after eight o'clock Prince Albert, the Lord Warden of the Stannaries, held in a grand hall, took his seat, for the purpose of hearing an appeal in this case, his Royal Highness had the Lord Chancellor and the Master of the Rolls on his right, and Lord Brougham, Vice-Chancellor of the Duchy of Cornwall, on his left. The Prince was also attended by the Earl of Lincoln, Lord Portman, Sir H. Wheatley, Mr. Romford, and Mr. Agass, members of the Duchy of Cornwall. The title of the case having been read, the Solicitor General, who appeared on behalf of the appellants or defendants, rose to address the court. He had the honour to appear before his Royal Highness and their lordships in this case, which was an appeal against a decree of the Vice-Warden of this court. One of the principal grounds of objection to this decree was, as they (the appellants) alleged, the want in this court of jurisdiction to entertain questions of equity; that it had no power to proceed in any manner contrary to the principles of common law; and that the Crown had no power to create a court of equity in the Duchy of Cornwall. The learned gentleman then went into a short history of the Stannaries Courts, and proceeded to argue at great length, and cite cases in support of his argument, tending to show that there were no provisions in the constitution of these courts empowering them to exercise the jurisdiction of courts of equity.

The Lord Chancellor suggested that there were many courts having such jurisdiction—the Court of the County Palatine of Chester, for instance. The Solicitor General submitted that such was undoubtedly the case, but there was a difference between the Court of the County Palatine of Chester and the courts in question—while the latter, although they possessed many *jurisdictio*, did not possess the power of acting as courts of equity. The city of London had its own Court of Chancery, but its powers had been confirmed by an Act of Parliament. The distinction between the courts was pointed out in *Comyns's Digest*.

The Lord Chancellor was of opinion that the Stannaries Courts had exercised such jurisdiction in the reign of Charles I.

The Solicitor General—Yes, but it was a modern assumption. The case out of which the present appeal arose was this:—On August 12th, 1825, John Kean, of Cornwall, being lawfully possessed of a certain mine or tin bounds, called the Polbhem Mine, granted full and free liberty, licence, power, and authority to the present plaintiff to dig, work, and search for tin ore for twenty-one years, and that in 1834 William Vice and others forcibly and fraudulently took, kept, and still keep possession of the same, digging, working, searching for, and carrying away tin ore of divers values, to the manifest injury of the petitioner, and contrary to the law of the Stannaries. The petitioner thereupon called upon them to deliver up an account of the tin and tin ore so dug and taken away; but the defendants had hitherto refused, and still did refuse, to deliver up the said account, the tin ore, or any part of them. Now this petition involved a question of title to property, for it called upon the court to turn out the parties now working the mine and give possession to the petitioner. If the plaintiff were legally right, he could recover possession by common law, by means of an action of ejectment, or by an action of recovery; and while this was the case, was it equitable, just, or right that this petition should be allowed? If the decree of the court was right, the Vice-Warden would be called upon to adjudicate the question of title to lands and most valuable property in the county of Cornwall. Now, was there any jurisdiction in a court of equity to deliver up possession of property to which there was a legal title? He (the Solicitor General) apprehended there was not. Such a practice was contrary to the invariable rule of law in such cases. Mr. Stannard followed on the same side.

Messrs. Bland and Barlow, on the other side, argued that it was not governed by the laws of the land, and that the Warden's Court had full jurisdiction. It was observed that the defendants objected to the plaintiff's claim, because he had not worked the mine from 1827 to 1834, and, therefore, that defendant had a right to enter and work; but the Act provided, that, if a holder neglected, he must have regular notice, and regulate the mode by which he must be entered and proclaimed. It was denied that any process of law would have relieved the plaintiff. The jurisdiction of the Warden's Court was complete; the Act was decisive on that point. The Stannary Court, from time immemorial, took cognizance of all such questions, and, indeed, all questions of difference between tinners. The court was not founded upon the plan of the courts at Westminster, but upon the exigencies of society. The object of the court was to prevent litigation. The Charter of King John distinctly laid down that the Warden and his bailiff shall judge between the tinners, and do them right. The Charter of Edward I. exempts tinners from answering in courts of law, except in pleas of life, limb, and land, and the plaintiff had no right to the land, but only to the tin therein, and did not set up any claim to the land. But the power of the Court of Stannary had been recognized in all cases. Application was made to Edward the Black Prince, by a minister of the church, alleging that by working the mines the church lands were damaged. But the complaint was at once referred to the Stannary Court. Another case was cited, which had been also referred in the same way. Any action that the plaintiff could have brought might have been answered by a plea that it was in the jurisdiction of the Stannary Court, and thus the plaintiff must have failed. The tinners were evidently protected against all courts of law, and it was equally clear he would have the same plea to urge against a court of equity. It had been objected that the plaintiff had proceeded by bill, but, from time immemorial, that had been the mode of proceeding, even for the recovery of a debt for goods sold and delivered for the use of mines, and judgment was invariably given. The learned gentlemen then went into the case, and argued for the justice of the Vice-Warden's decree, which was justified in every way by precedents—by the merits of the case itself—by the charters which created the courts for the express purpose of settling differences between tinners—and by the fact that the petitioner was shut out from any other mode of proceeding. The Solicitor General replied, urging the inconsistency of the suggestion that the powers of the Stannary Courts should supersede that of the Chancery Court, and be at variance with the constitution and practice of the courts of law. The Court took time to consider its judgment, which it is expected will be given next week at the Palace.

Prince Albert then took his departure, shortly after two o'clock, his Royal Highness having sat in his court for more than six hours.

LORD ALVANLEY'S MINERAL ESTATES.

VICE-CHANCELLOR'S COURT—MAY 22.

ALVANLEY V. KIRKLAND.—In the year 1833 Lord Alvanley conveyed certain estates to trustees, upon trust to satisfy the claims of his lordship's creditors; he subsequently commenced the present suit for the purpose of obtaining from the trustees, who are the defendants, an account of their dealings with the property. The usual decree was obtained four years ago, and was protracted until the month of May, 1840, when the bankruptcy of one of the creditors, who had been made a defendant in the suit on behalf of himself and the other creditors, arrested the further progress of the suit, on the ground of an alleged defectiveness in the frame of the second in consequence of that event. Mr. Strong, another creditor of Lord Alvanley, then applied to the Master for leave to conduct the cause in lieu of Lord Alvanley, and this request was complied with. At the conclusion of the arguments of counsel in support of the motion to discharge the Master's order, the further hearing of the case was postponed.

The arguments were concluded on Wednesday morning, when his HONOUR said he wished to read intensely the affidavits which had been brought before him, and he should, therefore, postpone his judgment.

QUESTION OF SEIGNIORY OR MANOR DUES.

SMITH V. THE DUKE OF BEDFORD.—Mr. E. J. LLOYD moved on behalf of the plaintiff for the production of papers in the custody of the defendant or his agents. The plaintiff was the worker of two collieries in Gloucestershire, one of which was called the Leadcliff Colliery, the other the Old Church Pit Colliery. It was alleged by the duke that both were situated within the manor of Kilbury, of which his grace was the lord. The plaintiff transported the coal he worked to the banks of the river which fell into the bay of Swansea. The duke claimed to be entitled to a payment of six pence per ton (as it was termed, consisting of a certain number of bushels) for all coal raised upon the manor, and carried through it to the river, and exported thence to Swansea. The plaintiff having resisted this claim, an action had been commenced to try the right, in which the general issue was pleaded. A bill of discovery had been filed by the defendant at law for the production of the documents named, in aid of his defence. The case intended to be made in answer to the action was, that there had been such a variance in the payments, and the amount of bushels in each weight, as to negative any customary payment, and that there had been a variance in the manner in which such customary payments were paid. It was also stated, that in a bill filed by Lord Fitzroy and Gloucester Somerset, as trustees of the late Duke of Somerset, for the recovery of certain alleged arrears due from Mr. Smith, they had made their claim of the payment in question, as payable not only for every weight of coal raised or gotten under the manor, but also for the weight and place to be paid for the delivery at the river, thus making an important essential part of the consideration or subject matter, in respect of which the dues were payable. Amongst other documents, production of which was sought, was a survey of the manor and subjacent, made by virtue of a commission from George Cornwall, which it was said, by the defendant in equity, had not been issued by him as lord of the manor.

Mr. LLOYD and Mr. CAMPBELL, on behalf of the defendant, resisted the motion. The answer denied that there had been any such variance in the manner of payment as was suggested, except by mistake, when it was immediately discovered and corrected, by the party liable being called upon

to pay the difference. It was argued that what had been stated by the defendant in another suit was not to be held as binding upon this defendant. The ground motion was merely an attempt to expedite, made with the hope of detecting some infirmity in the title of the plaintiff's law. The bill, on the face of it, showed a want of equity. Mr. LLOYD was heard in reply. His HONOUR asked for the bill and answer, and took time to consider of the application.

ALLEGED INFRINGEMENT OF RIGHT OF "BRAND."

COURT OF COMMON PLEAS—MAY 25.

CRANKHATE, THOMPSON.—This action, it will be remembered, was tried some time since at the London sittings, and was brought by the plaintiff against the defendant (both parties being Greek housemasters) to recover damages for having fraudulently and unlawfully imitated the mark they put upon their iron for the Constantinople market, by which the sale of the iron had been injured. The jury, after a very lengthened trial, found a verdict for the defendants. A rule nisi was subsequently obtained to set aside the verdict on the ground of misdirection and of its being against evidence; and also in respect of the legal effect of the notice to the defendants to discontinue the use of the particular mark. The COURT, after hearing the judge's notes of the evidence, thought there was no ground to disturb the verdict as being against evidence.

Sir Thomas Wilde, Mr. Serjeant Bompas, and Mr. Serjeant Channell now showed cause against the rule on the other points, and occupied the attention of the court until nearly four o'clock, when the further hearing of the case was adjourned until Thursday next.

On Thursday the case came on again for argument, when Mr. Serjeant BOMPAS, having addressed the court at great length in support of the rule, the COURT thought that the fact of notice having been given by the plaintiff, that the defendants were imitating his mark, did not affect the merits of the question between the parties, because the action was brought for an imitation fraudulent in point of fact. The case had been properly left to the jury, and the rule must, therefore, be discharged.

LIABILITY OF SHAREHOLDERS—PAYMENT OF CALLS.

COURT OF COMMON PLEAS—MAY 25.

THE ATLEBURY RAILWAY COMPANY V. MOUNT.—Lord Chief Justice TINDAL delivered judgment in this case, which was argued in last Michaelmas term, and which the court had taken time to consider. The action was brought in debt for calls of 5l. per share upon fifty shares in the undertaking for which the company was incorporated, and the defendant's answer to the action was, that two days before the calls made by the directors were payable, he had duly transferred his shares to one Charles Thompson. It was stated that the company brought an action in the first instance against Thompson, the transferee of the shares, but the Court of Queen's Bench decided, in Hilary Term, 1841, that the action against him was not maintainable. The seller, therefore, the present defendant, was sued for the amount of the calls in this court, and the main question discussed upon demurrer to the defendant's plea was, whether the proprietor of the shares at the time the call was payable, or the owner of them at the time the call was made, was liable for the amount. On the part of the defendant it was contended that the liability fell upon the proprietor for the time being when the calls were payable, while it was urged on behalf of the railway company that the proprietor of the shares at the time the call was made was the party from whom they were entitled to demand payment.

The COURT now expressed their opinion, looking at the different sections of the Act of Parliament, that the plea was a good answer to the action; but in saying this, they did not mean to intimate any disapprobation of the decision in the Court of Queen's Bench. Their judgment, therefore, must be for the defendant.

A. L. T. WOOD'S TALACRE IRON AND COAL COMPANY.

SCOTT V. CHAPPELLOW.—This was an action upon two bills of exchange, to which the defendant, by his fourth plea, pleaded in substance that, before he accepted the bills upon which the action was brought, a certain joint-stock mining company, assuming to act, and acting as a corporate body, and agreeing to transfer their shares without any restriction, without having first obtained an Act of Parliament, or royal charter, or letters patent for that purpose, accepted certain bills of exchange in consideration of having purchased the interest of two of the principal shareholders, who drew the bills, and endorsed them, after they had been accepted by the company, to the plaintiff. The plea then stated an agreement to renew the bills, and averred that the defendant, being a member and shareholder of the company, accepted the bills upon which the present action was brought in lieu of the former bills, and for no other consideration whatever. The plaintiff replied in the general form, *de injuria*, and to this replication the defendant demurred.

Mr. Serjeant GAVESON, in support of the demurrer, contended that the plea was a denial of the promise alleged in the declaration, and did not contain matter of excuse. The general replication was, therefore, bad.

Mr. Serjeant CHANNELL, on the other side, maintained that the plea did admit that a contract had been made in point of fact, and then set out the circumstances, which showed that the defendant had received no consideration. The plea, therefore, contained matter of excuse; but, if their lordships had any doubt on this subject, he was prepared to contend that the plea itself was bad.

The COURT, however, after hearing Mr. Serjeant GAVESON in reply, said that they thought the replication sufficient, for the plea appeared to them to amount in substance to an excuse by the defendant for the non-payment of the bills on which the action was brought. The plea admitted that the plaintiff was the holder of bills which the defendant had accepted, and which he did not pay when they arrived at maturity, and it then said, in effect, "I did not pay, because I am excused from paying under the circumstances." The plaintiff must have judgment.

PREVENTION OF ACCIDENTS ON RAILROADS.

The sitting of the Paris Academy of Sciences on Monday, the 16th inst., was almost exclusively occupied with a discussion on the means of preventing, by the adoption of precautionary measures, the recurrence of accidents on railroads.—M. Dulong opened the discussion by reading a letter from one of the directors of the London and Birmingham Railway, in which the writer explained his reasons at some length for preferring four-wheeled locomotives to those of six wheels, stating that the increased weight of the six-wheeled locomotive (one-third) rendered them more likely to cause accidents by the breaking of the axles, in which case, the four remaining wheels would not, as was generally supposed, retain the locomotive on the rails. The writer concluded, by wishing that the use of locomotives joined together could be prohibited, but it had been found impossible, owing to the wants of the service requiring more waggonage than could be drawn by a single locomotive.

M. Perdonnet, formerly an engineer of the Versailles and Meudon Railway, stated that four-wheeled locomotives were less subject to get off the rails in curves, and it was generally acknowledged that the breaking of the axles was more frequent in six-wheeled locomotives than those with four. After some very animated remarks, he stated that four-wheeled locomotives were not more dangerous than those with six wheels, and that when locomotives with six and four wheels were used together, those with four wheels should invariably be placed in front, and that large trains do not expose passengers to greater danger than small ones multiplied, but their speed ought to be moderated; he then noticed three points which had already been discussed by the Academy—1st, the use of a sort of hook or drag to impede the motion, and, in case of accident, disconnect the train; 2d, the propriety of rendering the wood of the carriages incombustible; and, 3d, the addition of waggons without passengers, and filled with inert matter, before and behind the train. The first two points are but slightly glanced at. On the third M. Perdonnet said—"Such a measure would be very useful for railway proprietors who have to convey merchandise, and where the railway destinations served remain fixed. In such case the practice would augment beyond measure the dead weight." The objection of M. Perdonnet is founded on the expense to railroad companies of carrying a dead weight; but it strikes us also that a dead weight would increase the momentum of a train on a descent, and would, therefore, be dangerous to passengers with an otherwise heavy train. Such danger can only be avoided by having short trains. The business transacted with the reading of a letter by M. Arago, from Mr. Manby, the English engineer, corroborating many of the facts and inferences alluded to above.

CART-IRON V. WAGGON-IRON RAILS.—(From a correspondence.)—At the annual meeting of the St. Etienne and Loire Railway Company, the directors expressed their conviction of the necessity of abolishing the use of cart-iron for rails in future, and substituting wrought-iron for that purpose, as also for the spokes of the wheels; the reason of that determination was explained by the announcement that on less than 200 wheels had been broken during the last year from the use of cart-iron on their line, while on the Reuss Railway, where wrought-iron only was employed, but three wheels were injured. This alteration, with some others, found requisite from the important construction of the railway (one of the most forward in France), the directors feared was but a portion of the difficulties with which they would have, for some time, to contend.

CONSERVATION OF CHROMIUM AND SULPHURIC ACID.—According to the author, a regular industrial crystallization may be obtained by acting with sulphuric acid on bichromate of potassa, or, better still, chromate of lead. As in the crystallization of ammoniacal sugar, to obtain more regular crystals, we may put on the liquid a layer of alcohol.—M. Witting, *Chemical Repository*.

CONSUMPTION OF SMOKE—CHANTER'S PATENT FURNACE AND BOILER.

The subject of consumption of smoke—thereby avoiding a nuisance, and at the same time economizing fuel—has been oft treated upon in our columns, and elicited many valuable communications, amongst others from Mr. C. W. Williams and Mr. C. Hood. We have this week had submitted to us the reports of several parties, expressive of the opinions they entertain—based on practical observation and experience—of the last patent taken out by Mr. Chanter to effect the desired object, and to which we here refer, considering that a question so important, whether as affecting the economy of fuel or remedying a nuisance, cannot be too freely discussed, nor publicity be too extensively afforded. We find it impracticable to describe the patented furnace and boiler by which this object is achieved, without a diagram, which we purpose giving on a future occasion, with more minute details than we are now prepared to do, and shall, therefore, confine our notice to the principal points to which our attention has been directed.

We are informed that the *Asen* and *Seewerstaam*-boats, built by Messrs. Acraman, Morgan, and Co., of Bristol, for the West India Mail Packet Company, each of 1300 tons, have been supplied with the patented furnace and boiler—the patent to which we refer combining the joint-application of certain principles, or powers, acquired by former patents secured by Mr. Chanter. It is stated that, with respect to steam navigation, full one-half of the smoke is got rid of, and the carbon perfectly consumed, and by the peculiar construction of the boiler safety is secured, there being a large quantity of water over the fire-cover, and the clearing the furnace-bars and removing the ashes, or clinkers, is effected without in any way interfering with the machinery, and thereby avoiding the dust, which is at times highly injurious, the stoker also not being subjected to the intense heat as under the circumstances attendant the use of an ordinary boiler and furnace; the latter may not appear to be of serious moment, but to those acquainted with the engine-room of a steam-boat these advantages will be duly appreciated—at the same time being a great saving of labour.

Having noticed the application of the patent to steam navigation, we may note one or two cases which have been brought under our immediate notice, as relates to stationary engines, or furnaces, and boilers used in soap factories and other establishments of a like nature; one of these is employed at the Saw-mills, Belvedere road, Lambeth—another at the soap factory of Dr. L. M. de Normandy, Whitechapel—also at the establishments of Messrs. Barlow and Anderson, Great Suffolk-street—Gibbs, Milton-street, &c. From the testimonials submitted, it is clear that, in some instances, a greater regularity of steam is obtained, with increase of power, the same consumption of coal taking place—in others we find there is a rapidity of combustion and economy of fuel, stated to be equal to 40 to 45 per cent.—the latter being in the case of its application to boilers, as in soap factories, distilleries, dye-houses, &c., while, in all cases, there is a total consumption of carbon and smoke. We hail this improvement with pleasure, for when we consider that, in addition to safety (as compared with the present form of boiler), the saving of fuel, and, further, the consumption of smoke, not to advert to the minor advantages of clearing the furnace-bars and subjecting the stoker to less heat than formerly, it would appear that the principal objects are gained. We are enabled to state on authority, that Mr. Charles Hood, having seen two of the furnaces in operation applied to steam-engines and boilers, has expressed his unqualified opinion that smoke is, by such means, effectually consumed, and that the principle is simple, while no injury is sustained by the boiler, which has been one of the main objections to the several plans heretofore adopted. Dr. Reid has also, we are informed, expressed his satisfaction of the principle, and intends applying it to the new Houses of Parliament.

INSTITUTION OF CIVIL ENGINEERS.

MAY 24.—A set of drawings of the "Machinery for Working the Diving-Bell at Kingstown Harbour," by Mr. Henderson, were exhibited, and a very short description of it was given, from which it appeared that 350 cubic feet of stones could be laid in a day from the bell, and that the works had proceeded most satisfactorily.

The "Steam Dredging Machine on the Caledonian Canal," described in a paper by Mr. Elliot, was only interesting as being one of the earliest machines of the kind brought into use; it appears to have rendered essential service in the construction of the canal, and, subsequently, in keeping it open. It has been put to rather a novel use, in excavating, not only under water, but in working away the banks, where it did more labour, and more economically, than the excavators with spades and barrows; the paper was illustrated by two good drawings.

"The Description of the Maplin Sand Lighthouse," by Mr. Redman, was accompanied by some nicely executed drawings, and the paper was illustrated by a model lent by the Trinity House, under whose auspices the Lighthouse was erected by Messrs. Walker and Burgess, the engineers to the corporation. The edifice is situated on a bank of sand at the mouth of the Thames, in the most intricate part of the navigation. Having ascertained from borings that for a depth of twenty-seven feet below low-water mark there was nothing but sand, it was decided to use Mitchell's screw moorings as foundations for the piles or standards upon which a wooden building should be raised, accordingly, by means of a raft moored over the spot, a series of eight screw moorings, each of four feet diameter, were forced in an octagonal form twenty-one feet deep into the sand; another screw was then fixed in the centre, and upon these nine foundations the pillars were raised, the wooden building and its lantern were then fixed, and by means of braces between the supporting piles the requisite stability was given to the edifice; from the animated discussion that ensued, it was gathered that in the heavy gales of wind which it had supported, that little vibration was felt—not more than in the Eddystone and other light-houses built of stone, but that when the seas at work the projecting gallery on one side, and the suspended ladder, a certain amount of torsion was felt. A comparison was made between this building and one of somewhat similar construction at Fleetwood Harbour, whence it appeared that although the latter building had a greater number of diagonal braces it was deficient in the continuous horizontal ties between the piles, and the system of trussing between the external piles and the centre pillar, to which the stability of the Maplin Sand Lighthouse was mainly to be attributed. The question of the decay or the decomposition of cast-iron in salt water was also touched on, but no new facts were elicited.

Mr. C. W. Williams exhibited and explained one of the tubes used by him for examining into the fire-place and flues of marine steam-boilers whilst at work; they have enabled him to ascertain many curious facts relative to the combustion of the gases, and to obtain a great diminution of the consumption of coal in the boilers of the Liverpool steamers, with which he is so extensively connected.

BLASTING BY GALVANISM.—The following particulars of this new method of blasting rock has been furnished to the *Deconstructive Chemistry* by Mr. W. H. Hulse, the professor of medical galvanism; and, though containing nothing materially different from what has already appeared in our columns, is worth perusal, as a correct description of a process that is making rapid progress in the estimation of mine proprietors, who certainly esteem, by the adoption of Mr. Roberts's ingenious plan, a doubt to prevent, as much as possible, the sacrifice of human life.—"The rock is bored as in the common process, and it is then filled with gunpowder; two ten centimes of the poles of a very powerful galvanic battery are then united by means of a very fine wire, which is placed on the gunpowder, having a few grains on the top of it; these wires reach, perhaps, 50 feet as far as the rock, where the battery is placed; one of them is then united to the zinc cylinder, but no explosion as yet takes place; it is seen, however, as the other wire touches the copper cylinder, the small wire at the other end immediately gets red-hot, sets fire to the gunpowder in contact with it, and the explosion takes place in consequence. It will thus be perceived that the galvanic battery merely acts as a substitute for the touch-paper of the old process, and the great advantage derivable from the galvanic method is, that the workman can be out of danger before there is the least chance of the explosion taking place, which is not the case with the old method. Now, although a battery used for this purpose must be of large dimensions, and the calorific power, however, yet if the two poles were united by the hands of the human body, as they were by the fine wire, not the least effect would be perceived, and if the two poles were applied by the tongue, scarcely any shock would be felt even in the smallest part."

PROGRESS OF THE EAST AND ORIENTAL STEAM NAVIGATION COMPANY.—At the half-yearly meeting of this company, held yesterday, the report presented, which was of a highly satisfactory nature, was unanimously adopted, and a dividend of 2½ per cent. declared. The affairs of the company were stated to be in a greatly improving condition, the receipts of the last six months having exceeded those of the preceding half-year by 250,000.

LAW INTELLIGENCE.

ROYAL POLSHEQU MINING COMPANY—APPEAL CASE.

STANNARIES COURT, DUCHY OF CORNWALL—MAY 21.
THOMAS V. VICE AND BENNETT.—At a few minutes after eight o'clock Prince Albert, the Lord Warden of the Stannaries, presided in an audience, took his seat, for the purpose of hearing an appeal in this case, his Royal Highness had the Lord Chancellor and the Master of the Rolls on his right, and Lord Brougham, Vice-Chancellor Wigram, and Baron Parke on his left. The Prince was also attended by the Earl of Lonsdale, Lord Portman, Sir H. Whistley, Mr. Pemberton, and Mr. Anson, members of the Duchy of Cornwall. The title of the case having been read, the Solicitor General, who appeared on behalf of the appellants or defendants, rose to address the court. He had the honour to appear before his Royal Highness and their lordships in this case, which was an appeal against a decree of the Vice-Warden of this court. One of the principal grounds of objection to this decree was, as they (the appellants) alleged, the want in this court of jurisdiction to entertain questions of equity; that it had no power to proceed in any manner contrary to the principles of common law; and that the Crown had no power to create a court of equity in the Duchy of Cornwall. The learned gentlemen then went into a short history of the Stannaries Courts, and proceeded to argue at great length, and cite cases in support of his argument, tending to show that there were no provisions in the constitution of those courts empowering them to exercise the jurisdiction of courts of equity.

The Lord Chancellor suggested that there were many courts having such jurisdiction—the Court of the County Palatine of Chester, for instance. The Solicitor General submitted that such was undoubtedly the case, but there was a difference between the Court of the County Palatine of Chester and the courts in question—which latter, although they possessed many *jurisdictio*, did not possess the power of acting as courts of equity. The city of London had its own Court of Chancery, but its powers had been confirmed by an Act of Parliament. The distinction between the courts was pointed out in *Comyns's Digest*.

The Lord Chancellor was of opinion that the Stannaries Courts had exercised such jurisdiction in the reign of Charles I.

The Solicitor General—Yes, but it was a modern assumption. The case out of which the present appeal arose was this:—On August 12th, 1835, John Bennis, of Cornwall, being lawfully possessed of a certain mine or tin bounds, called the Pulverton Mine, granted full and free liberty, licence, power, and authority to the present plaintiff to dig, work, and search for tin ore for twenty-one years, and that in 1834 William Vice and others fraudulently took, kept, and still keep possession of the same, digging, working, searching for, and carrying away, tin ore of divers values, to the manifest injury of the petitioner, and contrary to the law of the Stannaries. The petitioner thereupon called upon them to deliver up an account of the tin ore and tin ore so dug and taken away; but the defendants had hitherto refused, and still refused, to deliver up the said account, the tin ore, or any part of them. Now this petition involved a question of title to property, for it called upon the court to take out the parties now working the mine and give possession to the petitioner. If the plaintiff were legally right, he could recover possession by common law, by means of an action of ejectment, or by an action of recovery; and while this was the case, was it equitable, just, or right that this petition should be allowed? If the decree of the court was right, the Vice-Warden would be called upon to adjudge the question of title to lands and most valuable property in the county of Cornwall. Now, was there any jurisdiction in a court of equity to deliver up possession of property to which there was a legal title? He (the Solicitor General) apprehended there was not. Such a practice was contrary to the inalienable rule of law in such cases. Mr. BENNETT followed on the same side.

Messrs. KENNEDY and HANCOCK, on the other side, argued that it was not governed by the laws of the land, and that the Warden's Court had full jurisdiction. It was observed that the defendants objected to the plaintiff's claim, because he had not worked the mine from 1827 to 1834, and, therefore, that defendant had a right to enter and work; but the Act provided, that, if a holder neglects, he must have regular notice, and regulate the mode by which he must be ousted and restrained. It was denied that any process of law would have relieved the plaintiff. The jurisdiction of the Warden's Court was complete; the Act was decisive on that point. The Stannaries Court, from time immemorial, took cognizance of all such questions, and, indeed, all questions of difference between tinners. The court was not founded upon the plea of the courts at Westminster, but upon the exigencies of society. The object of the court was to prevent litigation. The Charter of King John distinctly laid down that the Warden and his bailiff shall judge between the tinners, and do them right. The Charter of Edward I. exempts tinners from answering in courts of law, except in pleas of life, limb, and land, and the plaintiff had no right to the land, but only to the tin therein, and did not set up any claim to the land. But the power of the Court of Stannaries had been recognized in all cases. Application was made, made to Edward the Black Prince, by a minister of the church, alleging that by working the mines the church lands were damaged. But the complaint was at once referred to the Stannaries Court. Another case was cited, which had been also referred in the same way. Any action that the plaintiff could have brought might have been answered by a plea that it was in the jurisdiction of the Stannaries Court, and thus the plaintiff must have failed. The tinners were evidently protected against all courts of law, and it was equally clear he would have the same plea to urge against a court of equity. It had been objected that the plaintiff had proceeded by bill, but, from time immemorial, that had been the mode of proceeding, even for the recovery of a debt for goods sold and delivered for the use of mines, and judgment was invariably given. The learned gentlemen then went into the case, and argued for the justice of the Vice-Warden's decree, which was justified in every way by precedents—by the merits of the case itself—by the charters which created the courts for the express purpose of settling differences between tinners—and by the fact that the petitioner was shut out from any other mode of procedure.—The Solicitor General replied, urging the inconsistency of the proposition that the powers of the Stannaries Courts should supersede that of the Chancery Court, and be at variance with the constitution and practice of the courts of law.—The COURT took time to consider its judgment, which it is expected will be given next week at the Palace.

Prince Albert then took his departure, shortly after two o'clock, his Royal Highness having sat in his court for more than six hours.

LORD ALVANLEY'S MINERAL ESTATES.

VICE-CHANCELLOR'S COURT—MAY 22.

ALVANLEY V. KENNEDY.—In the year 1828 Lord Alvanley conveyed certain estates to trustees, upon trust to satisfy the claims of his lordship's creditors; he subsequently conveyed the present suit for the purpose of obtaining from the trustees, who are the defendants, an account of their dealings with the property. The usual decree was obtained four years ago, and was promulgated until the month of May, 1840, when the bankruptcy of one of the creditors, who had been made a defendant to the suit on behalf of himself and the other creditors, arrested the further progress of the suit, on the ground of an alleged defectiveness in the frame of the record in consequence of that event. Mr. Strong, another creditor of Lord Alvanley, then applied to the Master for leave to conduct the cause in lieu of Lord Alvanley, and this request was complied with.—At the conclusion of the arguments of counsel in support of the motion to discharge the Master's order, the further hearing of the case was postponed.

The arguments were concluded on Wednesday morning, when his HONOUR said he wished to read intensely the affidavits which had been brought before him, and he should, therefore, postpone his judgment.

QUESTION OF SEIGNIORY OR MANOR DURE.

SMITH V. THE DUKE OF BRANFORD.—Mr. E. J. LLOYD moved on behalf of the plaintiff for the production of papers in the custody of the defendant or his agents. The plaintiff was the worker of two collieries in Shropshire, one of which was called the Llanfair Colliery, the other the Old Church Pit Colliery. It was alleged by the Duke that both were situated within the manor of Kilbury, of which his grace was the lord. The plaintiff contended that the collieries were situated on the banks of the river which fell into the bay of Swansea. The Duke claimed to be entitled to a payment of 2d. per ton (as it was termed, consisting of a certain number of bushels) for all coal raised upon the manor, and carried through it to the river, and exported thence from Swansea. The plaintiff having resisted this claim, an action had been commenced by the Duke, in which the general issue was pleaded. A bill of discovery had been filed by the defendant at law for the production of the documents claimed, and of his defence. The case included to be made in answer to the action was, that there had been such a variance in the payments, and the amount of bushels to each weight, as to require any customary payments, and that there had been a variance in the manner in which such customary payments were paid. It was also stated, that in a bill filed by Lord Fitzroy and Grosvenor, as co-owners of the late Duke of Devonshire, for the recovery of certain alleged arrears due from Mr. Smith, they had made their claim of the payment in question, as payable not only for every weight of coal raised or gotten under the manor, but also for the ways and means to lay it down for delivery at the river, thus making an important element part of the consideration or subject matter, in respect of which the Duke was payable. Amongst other documents, production of which was sought, was a survey of the manor and seignory, made by virtue of a commission from Oliver Cromwell, which, it was said, by the defendant in equity, had not been issued by him as protector, but as lord of the manor.

Mr. LLOYD and Mr. CROFTES, on behalf of the defendant, resisted the motion. The answer denied that there had been any such variance in the manner of payment as was suggested, except by mistake, when it was immediately discovered and corrected, by the party liable being called upon

to pay the difference. It was argued that what had been stated by the defendant in another suit was not to be held as binding upon this defendant. The general motion was made on an attempt or experiment, made with the hope of detecting some infirmity in the title of the plaintiff's law. The bill, on the face of it, showed a want of equity.—Mr. LLOYD was heard in reply. His HONOUR asked for the bill and answer, and took time to consider of the application.

ALLEGED INFRINGEMENT OF RIGHT OF "BRAND."

COURT OF COMMON PLEAS—MAY 25.

CRAWFORD V. THOMPSON.—This action, it will be remembered, was tried some time since at the London sittings, and was brought by the plaintiff against the defendant (both parties being great gun-makers), to recover damages for having fraudulently and unlawfully imitated the mark they put upon their iron for the Constantinople market, by which the sale of the iron had been injured.—The jury, after a very lengthened trial, found a verdict for the defendants.—A rule nisi was subsequently obtained to set the verdict aside on the ground of misdirection and of its being against evidence; and also in respect of the legal effect of the notice to the defendants to discontinue the use of the particular mark.—The COURT, after hearing the judge's notes of the evidence, thought there was no ground to disturb the verdict as being against evidence.

Sir Thomas Wilde, Mr. Serjeant Bompas, and Mr. Serjeant Channel now showed cause against the rule on the other points, and occupied the attention of the court until nearly four o'clock, when the further hearing of the case was adjourned until Thursday next.

On Thursday the case came on again for argument, when Mr. Serjeant BOMPAS, having addressed the court at great length in support of the rule, the COURT thought that the fact of notice having been given by the plaintiff, that the defendants were imitating his mark, did not affect the merits of the question between the parties, because the action was brought for an imitative fraudulent in point of fact. The case had been properly left to the jury, and the rule must, therefore, be discharged.

LIABILITY OF SHAREHOLDERS—PAYMENT OF CALLS.

COURT OF COMMON PLEAS—MAY 25.

THE ATLESDURY RAILWAY COMPANY V. MOUNT.—Lord Chief Justice TINDAL delivered judgment in this case, which was argued in last Michaelmas term, and which the court had taken time to consider. The action was brought in light for calls of 5l. per share upon fifty shares in the undertaking for which the company was incorporated, and the defendant's answer to the action was, that two days before the calls made by the directors were payable, he had duly transferred his shares to one Charles Thompson. It was stated that the company brought an action in the first instance against Thompson, the transferee of the shares, but the Court of Queen's Bench decided, in Hilary Term, 1841, that the action against him was not maintainable. The seller, therefore, the present defendant, was sued for the amount of the calls in this court, and the main question discussed upon damages to the defendant's plea was, whether the proprietor of the shares at the time the call was payable, or the owner of them at the time the call was made, was liable for the amount. On the part of the defendant it was contended that the liability fell upon the proprietor for the time being when the calls were payable, while it was urged on behalf of the railway company that the proprietor of the shares at the time the call was made was the party from whom they were entitled to demand payment.

The COURT now expressed their opinion, looking at the different sections of the Act of Parliament, that the plea was a good answer to the action; but in saying this, they did not mean to intimate any disapprobation of the decision in the Court of Queen's Bench. Their judgment, therefore, must be for the defendant.

ALD. T. WOOD'S TALACRE IRON AND COAL COMPANY.

SCOTT V. CHAPPELLOW.—This was an action upon two bills of exchange, in which the defendant, by his fourth plea, pleaded in substance that, before he accepted the bills upon which the action was brought, a certain joint-stock mining company, assuming to act, and acting as a corporate body, and agreeing to transfer their shares without any restriction, without having first obtained an Act of Parliament, or royal charter, or letters patent for that purpose, accepted certain bills of exchange in consideration of having purchased the interest of two of the principal shareholders, who drew the bills, and endorsed them, after they had been accepted by the company, to the plaintiff. The plea then stated an agreement to renew the bills, and averred that the defendant, being a member and shareholder of the company, accepted the bills upon which the present action was brought in lieu of the former bills, and for no other consideration whatever. The plaintiff replied in the general form, *de injuria*, and to this replication the defendant demurred.

Mr. Serjeant GASELER, in support of the declaration, contended that the plea was a denial of the promise alleged in the declaration, and did not contain matter of excuse. The general replication was, therefore, bad.

Mr. Serjeant CHANNELL, on the other side, maintained that the plea did admit that a contract had been made in point of fact, and then set out the circumstances, which showed that the defendant had received no consideration. The plea, therefore, contained matter of excuse; but, if their lordships had any doubt on this subject, he was prepared to contend that the plea itself was bad.

The COURT, however, after hearing Mr. Serjeant Gaseles in reply, said that they thought the replication sufficient, for the plea appeared to them to amount in substance to an excuse by the defendant for the non-payment of the bills on which the action was brought. The plea admitted that the plaintiff was the holder of bills which the defendant had accepted, and which he did not pay when they arrived at maturity, and it then said, in effect, "I did not pay, because I am excused from paying under the circumstances." The plaintiff must have judgment.

PREVENTION OF ACCIDENTS ON RAILROADS.

The sitting of the Paris Academy of Sciences on Monday, the 16th inst., was almost exclusively occupied with a discussion on the means of preventing, by the adoption of precautionary measures, the recurrence of accidents on railways.—M. DELORENT opened the discussion, by reading a letter from one of the directors of the London and Birmingham Railway, in which the writer explained his reasons at some length for preferring four-wheeled locomotives to those of six wheels, stating that the increased weight of the six-wheeled locomotive (one-third) rendered them more likely to cause accidents by the breaking of the axletrees, in which case, the four remaining wheels would not, as was generally supposed, retain the locomotive on the rails. The writer concluded, by wishing that the use of locomotives joined together could be prohibited, but it had been found impossible, owing to the wants of the service requiring more waggon than could be drawn by a single locomotive.

M. PERMONT, formerly an engineer of the Valenciennes and Meudon Railway, stated that four-wheeled locomotives were less subject to get off the rails in curves, and it was generally acknowledged that the breaking of the axletrees was more frequent in six-wheeled locomotives than those with four. After some very civilised remarks, he stated that four-wheeled locomotives were not more dangerous than those with six wheels, and that when locomotives with six and four wheels were used together, those with four wheels should invariably be placed in front, and that large trains do not expose passengers to greater danger than small ones multiplied, but their speed ought to be moderated; he then noticed three points which had already been discussed by the Academy—1st, the use of a sort of hook or drag to impede the motion, and, in case of accident, to prevent the train; 2d, the propriety of rendering the wood of the carriages incombustible; and, 3d, the addition of waggon without passengers, and filled with inert matter, before and behind the train. The first two points are not slightly glanced at. On the third M. Permont said—"Such a measure would be very useful for railway proprietors who have to convey merchandise, and where the railway destinations exceed certain limits. In such case the practice would augment beyond measure the dead weight." The objection of M. Permont is founded on the expense to a railroad company of carrying a dead weight; but it strikes us also that a dead weight would increase the momentum of a train on a descent, and would, therefore, be dangerous to passengers with an otherwise heavy train. Such danger can only be avoided by having short trains.—The business terminated with the reading of a letter by M. ARAGO, from Mr. MABRY, the English engineer, corroborating many of the facts and inferences alluded to above.

CASE-IRON V. WAGGON-IRON RAILS.—(From a correspondence.)—At the annual meeting of the St. Etienne and Loire Railway Company, the directors expressed their conviction of the necessity of abolishing the use of cast-iron for rails in future, and substituting wrought-iron for that purpose, as also for the spokes of the wheels; the cause of that decision was explained by the announcement that no less than 283 wheels had been broken during the last year from the use of cast-iron on their line, while on the Rouanne Railway, where wrought-iron only was employed, but those wheels were injured. This alteration, with some others, found requests from the important construction of the railway (one of the most important in France), the directors found was but a portion of the difficulties with which they would have, for some time, to contend.

COMPOSITION OF CHROMIUM AND NICKEL-IRON ALLOYS.—According to the author, a regular sublimed crystallisation may be obtained by adding sulphuric acid on bicarbonate of potash, or, better still, chromate of lead. As in the crystallisation of ammoniacal copper, to obtain more regular crystals, we may put on the liquid a layer of alcohol.—M. WILHELM, *Beck's Report*.

CONSUMPTION OF SMOKE—CHANTER'S PATENT FURNACE AND BOILER.

The subject of consumption of smoke—thereby avoiding a nuisance, and at the same time economising fuel—has been oft treated upon in our columns, and elicited many valuable communications, amongst others from Mr. C. W. Williams and Mr. C. Hood. We have this week had submitted to us the reports of several parties, expressive of the opinions they entertain—based on practical observation and experience—of the last patent taken out by Mr. Chanter to effect the desired object, and to which we here refer, considering that a question so important, whether as respects the economy of fuel or remedying a nuisance, cannot be too freely discussed, nor publicity be too extensively afforded. We find it impracticable to describe the patented furnace and boiler by which this object is achieved, without a diagram, which we purpose giving on a future occasion, with more minute details than we are now prepared to do, and shall, therefore, confine our notice to the principal points to which our attention has been directed.

We are informed that the *Asus* and *Somerset* steam-hoists, built by Messrs. Acreman, Morgan, and Co., of Bristol, for the West India Mail Packet Company, each of 1500 tons, have been supplied with the patented furnace and boiler—the patent to which we refer combining the joint-application of certain principles, or powers, acquired by former patents secured by Mr. Chanter. It is stated that, with respect to steam navigation, full one-half of the smoke is got rid of, and the carbon perfectly consumed, and by the peculiar construction of the boiler safety is secured, there being a large quantity of water over the fire-cover, and the clearing the furnace-bars and removing the ashes, or clinkers, is effected without in any way interfering with the machinery, and thereby avoiding the dust, which is at times highly injurious, the stoker also not being subjected to the intense heat as under the circumstances attendant the use of an ordinary boiler and furnace; the latter may not appear to be of serious moment, but to those acquainted with the engine-room of a steam-boat these advantages will be duly appreciated—at the same time being a great saving of labour.

Having noticed the application of the patent to steam navigation, we may note one or two cases which have been brought under our immediate notice, as relates to stationary engines, or furnaces, and boilers used in soap factories and other establishments of a like nature; one of these is employed at the Saw-mills, Holmdere-road, Lambeth—another at the soap factory of Dr. L. M. de Normandy, Whitechapel—also at the establishments of Messrs. Barlow and Anderson, Great Suffolk-street—Gibbs, Milton-street, &c. From the testimonials submitted, it is clear that, in some instances, a greater regularity of steam is obtained, with increase of power, the same consumption of coal taking place—in others we find there is a rapidity of combustion and economy of fuel, stated to be equal to 10 to 45 per cent.—the latter being in the case of its application to boilers, as in soap factories, distilleries, dye-houses, &c., while, in all cases, there is a total consumption of carbon and smoke. We hail this improvement with pleasure, for when we consider that, in addition to safety (as compared with the present form of boiler), the saving of fuel, and, further, the consumption of smoke, not to advert to the minor advantages of clearing the furnace-bars and subjecting the stoker to less heat than formerly, it would appear that the principal objects are gained. We are enabled to state on authority, that Mr. Charles Hood, having seen two of the furnaces in operation applied to steam-engines and boilers, has expressed his unqualified opinion that smoke is, by such means, effectually consumed, and that the principle is simple, while no injury is sustained by the boiler, which has been one of the main objections to the several plans heretofore adopted. Dr. Reid has also, we are informed, expressed his satisfaction of the principle, and intends applying it to the new Houses of Parliament.

INSTITUTION OF CIVIL ENGINEERS.

MAY 24.—A set of drawings of the "Machinery for Working the Diving-Bell at Kingstown Harbour," by Mr. Henderson, were exhibited, and a very short description of it was given, from which it appeared that 350 cubic feet of stones could be laid in a day from the bell, and that the works had proceeded most satisfactorily.

The "Steam-Dredging Machine on the Caledonian Canal," described in a paper by Mr. Elliot, was only interesting as being one of the earliest machines of the kind brought into use; it appears to have rendered essential service in the construction of the canal, and, subsequently, in keeping it open. It has been put to rather a novel use, in excavating, not only under water, but in working away the banks, where it did more labour, and more economically, than the excavators with spades and barrows; the paper was illustrated by two good drawings.

"The Description of the Mappin Sand Lighthouse," by Mr. Redman, was accompanied by some nicely executed drawings, and the paper was illustrated by a model lent by the Trinity-house, under whose auspices the Lighthouse was erected by Messrs. Walker and Burgess, the engineers to the corporation. The edifice is situated on a bank of sand at the mouth of the Thames, in the most intricate part of the navigation. Having ascertained from borings that for a depth of twenty-seven feet below low water mark there was nothing but sand, it was decided to use Mitchell's screw moorings as foundations for the piles or standards upon which a wooden building should be raised, accordingly, by means of a raft moored over the spot, a series of eight screw moorings, each of four feet diameter, were forced in an oblique form twenty-one feet deep into the sand; another screw was then fixed in the centre, and upon these nine foundations the pillars were raised, the wooden building and its lantern were then fixed, and by means of braces between the supporting pillars the requisite stability was given to the edifice; from the animated description that ensued, it was gathered that in the heavy gales of wind which it had withstood, that little vibration was felt—not more than in the Eddystone and other light-houses built of stone, but that when the seas set work the projecting gallery on one side, and the suspended ladder, a certain amount of tension was felt. A comparison was made between this building and one of somewhat similar construction at Fleetwood Harbour, whence it appeared that although the latter building had a greater number of diagonal braces it was deficient in the continuous horizontal ties between the piles, and the system of trussing between the external piles and the centre pillar, to which the stability of the Mappin Sand Lighthouse was mainly to be attributed. The question of the decay or the decomposition of cast-iron in salt water was also alluded to, but no new facts were elicited.

Mr. C. W. Williams exhibited and explained one of the tubes used by the Corporation into the fire-place and flues of marine steam-boilers whilst at work; they have enabled him to ascertain many curious facts relative to the combustion of the gases, and to obtain a great diminution of the consumption of coal in the boilers of the Liverpool steamers, with which he is so extensively connected.

BLASTING BY GALVANISM.—The following particulars of this new method of blasting rocks has been furnished to the *December Chronicle* by Mr. W. H. Hulse, the professor of medical galvanism; and, though containing nothing materially different from what has already appeared in our columns, is worth perusal, as a correct description of a process that is making rapid progress in the estimation of mine proprietors, who certainly esteem, as much as possible, the sacrifice of human life.—"The rock is bored as in the common process, and it is then filled with gunpowder; the two extremities of the poles of a very powerful galvanic battery are then united by means of a very fine wire, which is placed on the gunpowder, having a few grains on the top of it; these wires reach, perhaps, as far as forty or fifty yards, where the battery is placed; one of them is then united to the zinc cylinder, but no explosion as yet takes place; the steel wire, however, as the other wire touches the copper cylinder, the steel wire at the other end immediately gets red-hot, sets fire to the gunpowder in contact with it, and the explosion takes place in consequence. It will thus be perceived that the galvanic battery merely acts as a substitute for the touch-paper of the old process, and the great advantage derivable from the galvanic method is, that the workman can be out of danger before there is the least chance of the explosion taking place, which is not the case with the old method. Now, although a battery used for this purpose must be of large dimensions, and the galvanic power somewhat, yet if the two poles were united by the hands of the human body, as they were by the fine wire, not the least effect would be perceived, and if the two poles were applied to the tongue, scarcely any shock would be felt even in the smallest part."

PROVINCIAL AND ORIENTAL STEAM NAVIGATION COMPANY.—At the half-yearly meeting of this company, held yesterday, the report presented, which was of a highly satisfactory nature, was unanimously adopted, and a dividend of 2½ per cent. declared. The affairs of the company were stated to be in a gradually improving condition, the receipt of the last six months having exceeded those of the preceding half-year by 100000.

ORIGINAL CORRESPONDENCE.

ON THE EXPLOSION OF STEAM-BOILERS.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—In the last Number of your Journal is inserted, under the head "Steam-Boiler Explosions," a notice of a paper read at the Academy of Sciences, from M. Jobard, of Brussels, on some experiments which he proposes to make, with a view of ascertaining the best means of preventing the explosions of steam-boilers. The principal experiment proposed by M. Jobard is, such a construction of the boiler as will permit, when the mixture of explosive gases has been formed, the introduction of a stream of atmospheric air, so as to render them incombustible. Now, Sir, if you will refer to the *Mechanics Magazine*, No. 375, page 311, you will find the following suggestion for the same purpose by myself; therefore a great coincidence appears between us, but I am most certainly first in the field.—"I believe it is generally understood that the explosions of steam-boilers are occasioned by hydrogen, or some other gases, accumulating and mixing with the steam in the boilers, at least, that some kind of explosive mixture takes place, by which the boilers are burst, the boiler-valves not acting at times properly, or not opening sufficiently to allow of the escape of the mixed vapours or gases into the open air; if so, would it not be a good plan to blow a steady stream of air heated to the most suitable degree into the boiler, and downwards upon the surface of the water; a valve should, of course, be affixed to the boiler, to discharge the air again from the boiler, that valve being fixed upon a principle of continued action, perhaps the valve should be kept in action by the engine itself; the hot air would not only purify the boiler of all foul gases, but would accelerate the generation of steam."

Blancmou, May 24.

THOMAS DEAKIN.

WATER-WHEELS.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—To a 40-foot water-wheel, radius twenty feet, having 4000 lbs. of water to perform one revolution, then 2000 lbs. supplies one-half the circumference, therefore, without any friction, and the power acting with full force, twenty feet from the centre, would raise 2000 lbs. forty feet high—the extreme height of the wheel; but, mathematically applied, the force cannot exceed one-half, taking a proportional average from the centre to the rim, consequently the 2000 lbs. raised must, in the first place, be reduced to 1000 lbs.; 2d, from 1000 lbs. about one-third should be deducted for inertia of wheel and the deficiency of water really acting thereon, which would reduce the actual power as from 3 to 1, or 1233 lbs. lifted with 4000.

Observing several letters in your valuable Journal on this subject induced me to send you the above, which I hope will not be considered inconsistent with theoretical reasoning. My only motive is for the best information, and I should like to see the matter carried on with a good feeling, until a decision takes place beneficial to the community.

Dunlop, May 23.

M. D. THOMAS.

EXAMPLE.—From the revolution, amounting to 4000, deduct one-half, reducing it to 2000; average from centre to rim 1000, deducting for inertia, &c., one-third, leaves 666 for one-half revolution, or 1333 for the whole 4000.

WATER-WHEELS.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—John Bull said on the 2d of April, page 168, 3d column, and 34th line, that "one fact is worth a thousand assertions." If we go by this rule W. Wheeler has given us six facts, which must be worth 6000 of a "A Miner's" assertions.

Tunaroga, May 25.

H. PENNERTHY.

WATER-WHEELS.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Your correspondent may be a good miner, but his mechanical powers are most assuredly mediocre. His views of hydraulic calculations, as appeared in your columns of No. 352, prove him to be a mere novice in the matter. Another correspondent on water-power says "I am no wizard," but if your Bickeligh miner can whirl (or whir) about the wheel to perform 66 per cent. he has an undoubted right to the title, and it would be far more becoming his profession by his signing his future correspondence as "A Wizard" than by that of "A Miner." Anonymous attacks made on an individual are very annoying, but public writers must be satisfied to submit to the lashes of their opponents. In conclusion, I beg still to hold for my calculations as being far more correct than "A Miner's," and I trust some other scientific gentlemen will come forward to affirm what your Dublin correspondent, "O. H.," said last week, that 35 per cent. cannot be gained with a water-wheel—and how the wizard is to gain 66 no one knows but himself.

Vale of Clwyd, May 25.

W. WHEELER.

THE TINCROFT MINING COMPANY.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Having seen by your Journal of the 21st inst. that the Tincroft Mining Company have made a call of 10s. per share it quite surprised me, for having been in the habit of reading in your paper the "Mining Correspondence," and from that, I should say, the company should rather have made several dividends of 10s. per share, or the mining report is the most fallacious that ever was reported. Your inserting this in your next will oblige

A CONSTANT READER.

STRENGTH OF IRON WIRE AT A LOW TEMPERATURE.

The following experiments were made with iron wire 1-18th inch in diameter, subjected to direct strains:—

At 100° Fahr.	At 200° Fahr.
1st experiment broke with 215 lbs.	215 lbs.
2d ditto ditto 210 "	210 "
3d ditto ditto 213 "	213 "
4th ditto ditto 200 "	204 "
5th ditto ditto 210 "	215 "
6th ditto ditto 208 "	206 "
7th ditto ditto 218 "	220 "
8th ditto ditto 210 "	204 "
9th ditto ditto 224 "	228 "
10th ditto ditto 215 "	206 "
11th ditto ditto 218 "	220 "
12th ditto ditto 206 "	202 "

Mean..... 214 Mean..... 211
—J. M. BATHURST: *Journal of the Franklin Institute.*

DISCOVERY OF COAL IN THE ISLAND OF ST. CLARA.—We find, from some recent correspondence between Capt. Frauch, of the Chile steamer, and M. Rondelet, the governor of Otago, an opinion expressed (founded on the report of scientific geologists) that coal of an excellent quality can be procured in that island, and that steps are about being taken to work it.

DEERLY AND MIDLAND GEOLOGICAL SOCIETY.—A meeting of this society will be held at Dudley, on Tuesday, the 7th June, when the committee will lay before themselves a report on the igneous rocks and volcanic conglomerates of the South Staffordshire coal-field. The subject is a highly important one both to the geologist and the miner; and, as we understand that the report will be illustrated by specimens showing the alteration which these rocks have produced on the different coal measures with which they come in contact, as well as by numerous plates and sections, we anticipate an interesting meeting. Should the weather prove favourable, an excursion will afterwards take place to the Rowley Hills; and we would recommend all who feel an interest in the success of this useful institution, and who have not yet paid a visit to the fine collection of fossils which its museum contains, to embrace this opportunity of doing so.—*Midland Counties Herald.*

METALLURGICAL READER.—Mr. Blandford, in his *American Antiquities and Researches into the Origin and History of the Iron Race*, in treating on the relics of metallurgy, says—"Many metallic remains have also been discovered among the ancient ruins, some quite perfect, and others in a state of decomposition. Copper appears to have been in the most general use. It has been found in the moulds, either in irregular masses or worked into various forms, and sometimes related with silver. Arrows, beads, bracelets, circular plates or medals, knives, a cross, and pipe-bowls, all composed of this metal, have been discovered on the margin of a stream, which had probably washed away the surrounding soil, and part of the structure itself, when a silver ring was observed in the side of the mound. Its form was extremely simple, and resembled some of the northern patterns, being an inverted cone. It consisted of solid silver, the surface was smooth and regular, and its interior was finely grained."

THE MINERS' RELIEF FUND IN BELGIUM.

[Abstract of Report of the Minister of Public Works, dated 19th Dec. 1847.]

The report commences with a detailed historical view of the earlier regulations in force in Belgium relative to the relief of the miners and their families, in case of accident or sickness; as there is nothing particularly instructive in this, I shall proceed at once to what led to the existing arrangements.

Marked accidents, which took place principally in the department of the Ophir, in 1832, fixed the attention of Government and the public. It is to these accidents that is due the manifestation of the public solicitude. On the 19th January, 1832, sixty-eight miners perished in the colliery of Horion—victims of an explosion; on the 25th February following twenty-two workmen were buried under water in the mine of Beaujeu. Hubert Goffin, an overman, decimated, on this occasion, with the order of the Legion of Honour, saved there, by his courage and presence of mind, seventy workmen, who had remained buried underground five days and five nights. These accidents called forth the Imperial decree of 3d January, 1833, concerning the subterranean police of mines. A decree of the Emperor, of the 26th May, 1832, founded in France, or rather at Liège, the first relief fund.

I shall not examine here, in detail, the dispositions of this decree. Some were to be stepped from the wages of the workmen, but this was not obligatory, and it took place with difficulty; but all the empire, struck with the greatness of mind and the heroism of Goffin, who was the last man to leave the mine, contributed, by donations, to the relief of the wants of the victims of that catastrophe. After abundant distributions, Baron Miron applied what remained of the funds to the purchase of an annuity of 2227f. on the Great Book of France. This annuity still exists. A decree of your Majesty, of 30th September, 1839, has united it to the new relief fund formed at Liège. At the entry of the allied armies the steps ceased; the relief fund no longer existed—the Netherlands Government did not consent to its re-establishment. So early as the 24th December, 1815, the Governor of the province had addressed, to that effect, the Minister of the Waterstaats; the deputation of the States renewed the application on the 9th January, 1819—the Government refused it by its decision of 16th May, 1821. Later, a fresh application by the province did not even obtain an answer.

New lessons, and the result of more experience were required. At the time of the accidents in the mines of Cockerill and Esperance, in March, 1836, and August, 1839, the Netherlands Government limited itself to make donations of 3000 and 3200 florins; public charity and contributions of the owners occurred to alleviate great sufferings. Seventy-two workmen had perished in these two accidents; eleven others had been wounded. The mining was not, as yet, so common. On the 3d August, 1831, thirty-six workmen perished—victims of an explosion—at the colliery of Grand-Val-de-Bois-d'Epinois; on the 26th June, 1835, twelve workmen perished, by the same cause, at the mine of Petit-Fort; on the 8th August following thirty-eight workmen perished by an inundation at the colliery of Monceau Fontaine; on the 31st of the same month an eruption of water destroyed thirteen workmen at the colliery of Sarts; an accident occurred, on the 16th April, 1834, the death of nine workmen at the mine of Poirier; on the 18th April, 1835, fifteen workmen lost their lives in consequence of an explosion at the colliery of Trier-Kalsin; on the 6th December following fifteen workmen perished, by the same cause, at the colliery of Kessala—five others were severely wounded; on the 16th May, 1836, an inundation destroyed twenty-nine workmen in the colliery of St. Victoire; on the 14th June following twenty-two workmen perished, by the explosion of carbonated hydrogen, in the colliery of Grand-Hollain; sixty workmen perished, suffocated, or burned, on the 23d June, 1839, at the colliery of Esperance, at Sersing; on the 8th April, 1839, five damp occasioned the death of fifty-five workmen at the mine of Horion. But how many victims perished isolated, without attracting public compassion towards the relief of their families! In some of the disasters which I have noticed, Royal munificence, the budget of the state, or individual subscriptions, came in aid of the relations of the victims; but the greater part of them received no relief.

I hope, Sir, to be able soon to submit to you unpublished documents on the cause and nature of the accidents which have occurred within the last twenty years in the mines of Belgium. I shall now give you a summary of these last twenty years, from 1821 to 1840 inclusive:—

Province of Hainaut	Accidents	Killed	Wounded	Total
Ditto of Namur and Luxembourg	193	878	430	1501
Ditto of Liège	879	62	30	1169
Total in Belgium	1072	940	460	2072

The explosions, caused by the inflammable and the degradation of carbonated hydrogen gas, are the accidents which, if not the most numerous, are the most destructive. The following is a separate summary of these:—

Province of Hainaut	Accidents	Killed	Wounded	Total
Ditto of Namur and Luxembourg	44	144	122	290
Ditto of Liège	3	3	4	10
Total in Belgium	47	147	126	310

Thus, during these twenty years, 1309 serious accidents have occurred; 3392 victims have perished, or have been severely wounded or maimed—thus making a yearly average of 159 victims on a population which may be fixed, approximating during these twenty years, at 28,000; 818 individuals have been victims of explosions; but the 1710 workmen who in all perished during that time had wives and children left in misery. In valuing at four the number of the unfortunate whom they abandoned without resources, we shall have a total of 6850 suffering beings.

At last the extent of the calamity at the mine of Esperance created sensation. The archives of the department of public works contain several propositions which were made on the subject. M. Auguste Vischors, at present director of the administration of mines, published, a few weeks afterwards, an article, which was inserted in the *Revue Belge*, and which the *Revue Universelle* has republished; it is entitled, "On the Establishment of Relief Funds in Belgium in favour of Working Miners." One of my predecessors distributed several hundred copies of this work among the coal owners in different parts of the kingdom. As the delegates of Government, and in virtue of his own official functions, M. Vischors proceeded successively to Liège, Namur, Mons, Charleroi, and Falaix-Benroide, in order to explain adjustments of employers the advantages of relief funds. The provinces of Liège and Namur (the fund of the province of Namur comprehends the province of Luxembourg) acquired relief institutions by decrees of your Majesty, dated 9th June and 1st December, 1839. The regulations relative to relief funds of the districts of Mons and Charleroi have been sanctioned by Royal decrees of the 20th and 31st December, 1840. Finally, a decree of your Majesty, of the 30th September last, has approved of the regulations of the fund of the centre (Hainaut).

The report, after noticing what laws, regulations, or practice exists relative to the subject in Germany, Great Britain, and France, proceeds to its most important division—namely, the actual state of the relief funds in Belgium. The organization of relief funds in favour of working miners is throughout the same in the five subdivisions of our coal basins. The statutes have been approved of by your Majesty. The Governors of the provinces (at Charleroi, the commissary of the district) preside over the administrative commissions. The chief engineer of Government, or an engineer delegated by him, constitutes, of right, a part of this commission; the commissions are composed of employers and overseers; they render annually an account of their administration, which is addressed to the Governor of the province and to the Central Administration of Mines. The amount of the pensions is not fixed—it varies according to the wants of the persons who are to be relieved. It has been thought advisable not to specify any particular sum. The widows of workmen who have perished by an accident, their father and mother, if supported by them, receive an annuity for life—as also workmen maimed or become incapable to work in consequence of accidents; the children receive and until they are able to earn a livelihood. Besides these aids, which are called ordinary, the administrative commissions are authorized to distribute extraordinary relief by relations of the victims, who have no right to the pension, in case they stand in need of it—to aid workmen become infirm—to miners maimed, but not incapable of all working. It is regulated by the statutes that, on-relating and concerned with these common relief funds, each mine shall have a particular relief fund. The common fund grants pensions in the case of serious accidents, causing death or incapacity of work; the particular fund provides for the wants of workmen wounded or sick, &c. The association thus binds itself to providing for the most serious cases; its efforts concentrate upon the resources of each isolated establishment would be exposed to two strong blows; it is, in fact, the insufficiency of these resources, in the case of remarkable accidents, which has caused the re-establishment of, and will maintain, the common associations. The Liège and Namur owners have engaged for a period of five years—those of Hainaut for ten years. Every thing appears that they will contribute to the support of these resources, in the case of remarkable accidents, which has caused the re-establishment of, and will maintain, the common associations. The Liège and Namur owners have engaged for a period of five years—those of Hainaut for ten years. Every thing appears that they will contribute to the support of these resources, in the case of remarkable accidents, which has caused the re-establishment of, and will maintain, the common associations. The Liège and Namur owners have engaged for a period of five years—those of Hainaut for ten years. Every thing appears that they will contribute to the support of these resources, in the case of remarkable accidents, which has caused the re-establishment of, and will maintain, the common associations.

The title, in French, is, "Surveillance des mines" (the mines being self-sufficient to give relief, and to give the miners benefit of insurance, and to make them profitable).

Independently of these resources, the Liège fund has an annuity of 1087f. on the Great Book of France, arising, as I have said before, from the old relief fund established in the department of the Ophir. A decree of your Majesty, dated 30th September, 1839, has granted the enjoyment of this annuity to the new institution. The provincial council of Hainaut voted, for two years consecutively, a subsidy of 6000f., in favour of the relief fund established in the province. Finally, three establishments, the General Society for Advancing the National Industry, the Society of Capitalists, united for the object of Mutuality, and the Society of Commerce of Brussels, have given a donation to the relief fund of Mons of an annual subsidy of at least 5000f., specially for the purpose of the instruction of the children of miners. Besides the aid which the relief funds afford, the administrative commissions can, by virtue of these statutes, apply out of the reserved funds sums for the education of the children of the associated miners. Thus the institution, in providing for the moral wants of rising generations, contributes to ameliorate the future condition of the working miner—the benefit is not limited to the satisfaction of physical wants.

The Belgian collieries have exhibited humanity and a sound discretion in paying into the fund a quota equal to that which the workmen pay. It is to be observed, that the association exists among the owners, and not directly among the workmen. The subsidies allotted by the Legislature in favour of the association have decided the owners who were irresolute; rather than expose themselves, in remaining isolated, to all the consequences of accidents, they have found it their interest to form part of the association. At present the greater part of the owners are parties to these institutions. The relief funds of Mons and Charleroi have only existed for a year—that of the Centre was only established on the 1st October, 1841. We may then be proud, Sir, of the following result:—

		COLLIERIES.		WORKMEN EMPLOYED.		TOTAL.	
		Assoc.	Not assoc.	Assoc.	Not assoc.	Coll.	Workmen.
Hainaut	District of Mons.	20	16	12,118	900	53	14,829
	District of Charleroi.	42	29	43,200	938	21	7,668
Namur	Basin of Centre.	13	—	3,863	—	12	3,683
	Namur and Luxembourg	23	—	475	—	60	1,600
Liège		—	49	8,390	2618	109	11,009
Totals		108	118	31,407	7,006	304	34,818

This table was made out on the 1st October, 1841. Out of 304 collieries, 18 will be observed that 186 (and they are the most important) form part of the common association; out of 38,503 working miners, 31,407—that is to say, 81 per cent.—are attached to the associated collieries.

The subsidies of the Legislature have greatly insured the success of these relief funds; however extensive their resources may be, the relief funds could with difficulty dispense with the aid of the budget. The charges which they have to satisfy are very heavy. To the pensions paid during the first year are to be added all those which will be granted during the following years. It will be only at the end of a period, which we may estimate at fifteen years, that can be known approximately the annual amount of those charges. The pensions granted during the first year may then be considered as expired, and the amount continues in an uniform manner. In the month of September last the relief fund of Mons (founded 1st February, 1841) had already granted aid to the amount of 15,235f.; the relief fund of the district of Charleroi, established at the same date, had expended 13,830f.—several applications were yet under investigation; the Liège relief fund, which was established earlier, on the 1st July, 1839, supported, at the same date, annual charges to the amount of 15,000f. The association has, as yet, so little root in Belgium, that it ought to be fortified by the assistance of the State. The relief funds, as I have had the honour of explaining, are not only institutions of aid, but a means of moralising the working population.

I join to this report, as documents, a model of the statutes adopted, and a table of the collieries associated and not associated. Thus your Majesty, in establishing relief funds, in supporting them by the subsidies of the State, and the influence of your patronage, has founded establishments which strangers will admire in Belgium, and which different industries already project to imitate. In fact, the system of insurance, so useful, considering the dangers of the profession of the miner, is equally applicable as to other branches of industry. I shall cite, in particular, those where flax, wool, or cotton, are the subjects of work. There are other professions, as those of the fishermen at Ostend, Nieuport, Blankenburgh, and Antwerp, which present dangers analogous to those which occur in the working of mines; but the system of insurance and mutual charity is even applicable to trades which are not particularly dangerous; workmen may reciprocally guarantee each other against the periodical stagnation which is to be apprehended in branches of industry which relate to extensive manufactures. Insurance may be extended to all cases of sickness and infirmity; the workman, left to himself, has not the foresight, and does not possess the influence, necessary to bring to a good issue such project. It is, then, for the manufacturers, for the civil administrations, to set on foot the establishment of beneficence and relief funds. Modern philanthropy has nobly pleaded the cause of the workman; what is important above all, is to protect him against the reverses which occasionally threaten industry in the gigantic extension to which it has reached. It is not enough to provide for his health—for his comfort—he ought to be habituated to reflect as to the future. Once accustomed to do this, the workman will become more moral, because he will be persuaded that his condition is ameliorated.

The revenues of the relief funds are vested either in the public funds or in savings banks—thus the working class is interested in the preservation of public tranquillity. My department will render to your Majesty a yearly account of the relief fund instituted through your aid. The Government of your Majesty, in contributing, by wise regulations, to diminish the dangers inseparable from the profession of the miner, and in watching over the organisation of a permanent system of aid, will have shown, for the working class, a solicitude which will draw down blessings on the name of the First King of the Belgians.—L. DEBRASIERES.

MINING NOTICES.

[Under this head we purpose collecting such paragraphs as may appear in the provincial and other Journals, having reference to discoveries and improvements in mining operations at home and abroad. It is hardly necessary to observe, that we must not be considered to admit the correctness of the information conveyed, which, in too many instances, requires cautious investigation—the sequence of operations of parties in some instances, and the want of honesty in others, throwing a degree of responsibility on a Journal in giving publicity to reports, which we cannot take upon ourselves.]

TRIMDON COLLIERY.—Ground was broken for a new pit, for "winning" a portion of the valuable coal-field at Trimdon, on Monday last. The first was taken out by Mrs. Seymour, wife of Mr. A. Seymour, viewer to the owners, in the presence of some of the members of the company, and about 150 spectators, who were regaled with ale on the occasion.—*Durham Adver.*

CARVILLE QUARRIES.—On Tuesday last we enjoyed an ordinary tramp, by a visit to the extensive and valuable quarries of Carville, situate on the estate of Lord Panmure, in the parish of Carville. The tunnel by which the water is drawn off from the excavations is a very ingenious and extensive work, and its operations have been attended with results the most important. What particularly struck us in these quarries is the variety of stone contained in them, the magnitude of the masses taken out, and the beautiful play they are susceptible of. We were shown solid masses of stone measuring above twelve feet in length, and four or five in breadth, and we learn that places have been taken out considerably above the size mentioned. We understand that various slabs of this valuable stone have been forwarded to Edinburgh—that they are now much used as billiard tables, and that, from the remarkably fine polish they are capable of acquiring, they will, in all likelihood, soon supersede the "green cloth" altogether. We understand that parties who have made use of these polished slabs, instead of the common mahogany oak root or rosewood tables, express themselves as highly delighted with them. The quarries are so well known as valuable deposits for stone pavement, &c., that we think it unnecessary to allude to their being extensively worked for their treasures in this way. Independently of all other considerations, however, in the geologist, these quarries are full of matter of interest. Fossils, and specimens of a deeply interesting and valuable description, have been discovered in them, and we understand that they have been successively visited by those eminent geologists, Messrs. Miller and Lyell, who expressed themselves highly delighted with the discoveries they made, and the variety of geological specimens procured there.—*Edinburgh Guide.*

GLIMMERS MINING COMPANY.—This company has recently succeeded in laying open a new seam of coals, about one mile from the town of Glimmers, superior to any seam of extent, size, regularity, and quality, to any hitherto developed in that district. This discovery will not only give considerable additional employment to the poor, but ensure an abundant supply to the public at very reasonable prices. A gentleman connected with a steam-engine factory in Belfast, who witnessed the working of the steam-engine of the colliery, a few days since, was much surprised at the superior quality of the fuel, a small quantity of it raising the steam abundantly and quickly.—*Morning Advertiser.*

GLIMMERS MINES.—The *Carlisle Journal* states that through the courtesy of Mr. W. Fox, of that city, a rich vein of copper has been discovered at Hutton, on Cumbria Fells. In digging for the mine vein, a rich string of very fine brass or eight inches in depth, was found; and a specimen of this ore, and to be the richest ever discovered in these Fells, is said to be now in his shop, Beulah street, weighing upwards of three cwt.

EMPLOYMENT OF FEMALES IN MINES.—In the House of Commons, last night, Lord Ashley presented a petition, praying the House to pass a law for the exclusion of females from mines and collieries.

THE NEW TARIFF—EXPORT DUTY ON COALS.

A correspondent, writing on this subject, states, that, he has reason to believe, it is from information derived from a celebrated Professor of Geology, that Sir R. Peel has consented to the proposed export duty on coals—the measure being recommended to him on the ground “that foreign coal must come to England for coals.” How far that assertion is to be believed we leave our readers to judge. In another part of this day's Journal is inserted an account of a valuable discovery of coal at Cuba, and a week has passed for months but that attention has been directed to similar discoveries in different parts of the globe, while the mines of Belgium, being at present only of trifling depth, “it is not (our correspondent adds) reasonable to suppose, that the quality of the coal may improve on sinking deeper?” Let, then, the Government pause ere they carry a measure fraught with such injurious consequences to our coal districts as the one now before the House, and reflect on results that must inevitably follow—the ruin of the mines, and the thousands dependent thereon for their subsistence. Indeed, the *Morning Herald* states that a recent correspondence from Rouen already indicates the accuracy of our frequently-expressed opinion as to the effect Sir R. Peel's proposed extension of the export duty on coal would have in displacing the consumption of British produce on the Seine. Rouen, it will be recollected, is the limit where British coal from the sea comes into the most severe competition with Belgian coal introduced by canal; at the commencement of the present year British coal had gained supremacy in that market. The very announcement of Sir R. Peel's fiscal addition to the export-price of our coals has, however, given the turn of the market at Rouen to the Belgian article. The Belgians are, we learn, pouring in large quantities of coal to Rouen in anticipation of the imposition of the proposed tax, and are “pricking up,” to use the expressive language of a commercial letter, in that market. There can be little doubt that the proposed export duty will cause the loss to England of the markets of the northern parts of France; and this is a loss which our coalowners can now just ill afford. Such a loss will, moreover, lessen the amount of revenue which Sir R. Peel proposes to raise from the exportation. It is, therefore, to be earnestly hoped, that this tax on coal will be so modified as to inflict no such injury on the coalowners. If Sir Robert Peel must raise money by an export duty on coal, let him so impose it as not to check exportation, or give advantage to foreign shipping.

COAL MINES IN CUBA.

We are indebted to Silliman's *American Journal of Science* for some interesting particulars respecting the discovery of coal in Cuba, and the progress made in its examination, translated for our valuable contemporary by Mr. John H. Blake, of Boston, from the original of M. Castiella, in the *Diario de la Habana*.

The mine, it appears, is situated in the Partido de San Miguel, about six miles from Havana, and is particularly interesting, on account of its locality and the quality of the mineral. The coal is of two kinds, one of which, denominated “chapapote,” is the most abundant; 100 parts of this yielded fifty parts of volatile matter, and afforded by analysis—Carbon, 71.84; oxygen, 6.22; hydrogen, 8.40; ashes, composed of silica, oxide of iron, and sulphur, 13.51.—Total, 99.97.

The abundance and good quality of the coal are the two particulars embraced in this article, to which we should like most assuredly to give a greater extension. Almost at the lower extremity of a hill, whose inclination is not very steep, they have opened a rectangular well of four yards in superficial, and eighteen in depth, and at one yard excavation they met the coal, which continues to the above-mentioned depth, the quality of the ground being, as well at this point as in the others, a calcareous and argillaceous layer. At the distance of forty-five yards up the declivity, they have opened another well, three yards wide, two broad, and forty deep; in this place the coal was found at the depth of seven yards, and continues to the bottom, at which point, and in the centre of it, they made a bore of fifteen yards, always meeting with coal. At the four sides of the bottom they have opened a straight gallery, thirty yards in length, in which the vein continues horizontally without any interruption. In this well terminates another gallery, which, opening from the bottom of the other, communicates with this, the drain being obtained by means of a pump. On the road to Tapaste, and on the summit of the hill, at a distance of 400 yards from the preceding well, they have opened another, the vein of coal beginning at the depth of fourteen yards. It results, then, that in the small space above-mentioned, is found a vein of coal of forty-eight yards perpendicular, and more than sixty in surface, in the part based up to the month of April last, interrupted with layers of stone, and some spots of chalk, though of small extent, and rare. The bed of coal is almost horizontal; the difference of the depth at which it is found is one yard in the first well, seven in the second, and fourteen in the third, depending upon the variation of the surface of the declivity of the hill. The mine Prosperidad was examined by Mr. San Richard, an English engineer, who came to Cuba for this purpose; he wrote to the society the following, which we take from a copy now under our eyes:—“Descending into the well I became astonished at seeing such a vein of coal; never have I seen or heard till now, that there is in other places a similar vein, and I believe that I should not be mistaken in saying, that there are few persons who have seen another so extraordinary as this. The coal from the surface, to the depth of a few yards, appeared to me to be charged with bitumen, and a coal of very good quality for coke; that which I have now made with it, is, in my opinion, of superior quality. From the above-mentioned distance to that of forty or fifty yards that I descended, the quality of the coal changed much to its advantage; it is less bituminous, contains a greater quantity of oxygen, and is much more compact. I saw at the bottom of the well galleries opened to the four winds, in the length of twenty or thirty yards, and it is all around full of coal. There is also at the east a gallery a few yards from the bottom, to the extent of forty or fifty yards, all surrounded with coal, so that they see nothing else on all sides.”

COALS, CINDERS, AND CULM.

In the *Journal of the 20th ult.*, we published some particulars from the Parliamentary Returns, recently issued; we then stated that the total quantity of coals exported from the United Kingdom, from the 5th day of January, 1838, to the 5th day of January, 1843, was as follows:—

	1838	1839	1840	1841	1842	1843
1838	357,464 tons.	357,464	357,464	357,464	357,464	357,464
1839	371,371	371,371	371,371	371,371	371,371	371,371
1840	364,419	364,419	364,419	364,419	364,419	364,419
1841	310,631	310,631	310,631	310,631	310,631	310,631
1842	308,446	308,446	308,446	308,446	308,446	308,446
1843	324,448	324,448	324,448	324,448	324,448	324,448
1844	319,355	319,355	319,355	319,355	319,355	319,355

Of these, in 1838, Denmark took more than any other country (61,392 tons); Germany, the British West Indies, and the Channel Islands and Men, being the next largest importers. In 1841, and, indeed, ever since 1833, France has taken more of our coals than any other country. The following are the countries and amounts, exceeding an import of 100,000 tons:—France, 311,003 tons; Germany, 173,437; Holland, 173,374; Denmark, 151,140; and Prussia, 116,326. The British West Indies, the Channel Islands, and Men, take about the same quantity respectively. The declared value of the coals, exported from the United Kingdom, in 1840, was 576,319*l.*; in 1841, 673,307*l.* In 1842 the following were the exports of coal, culm, and cinders, and declared value thereof, from the ports specified:—

	1840	1841	1842
Newcastle	730,588	730,588	730,588
Southampton	408,515	408,515	408,515
London	189,345	189,345	189,345
Liverpool	119,949	119,949	119,949
Leam	39,395	39,395	39,395
South-west	51,153	51,153	51,153
Hull	37,994	37,994	37,994

Of the coals exported in 1841, the duty payable on exportation to foreign ships was 210*l.*; in British ships, 1,040*l.*; on cinders, in foreign ships, 10*l.*; in British, 5*l.* 6*s.* 8*d.* The duty on export to foreign countries, in foreign ships, is 10*l.* 6*s.* 8*d.* on culm, in British ships, 4*l.* 10*s.* 6*d.* On the ports shipping coal, &c., and where, in 1841, the following are the principal quantities:—Newcastle, 1,257,377; Southampton, 1,403,515; London, 617,000; Liverpool, 387,977 tons. The total quantity shipped to foreign countries from the ports of the United Kingdom, in 1841, was 2,600,000 tons; in 1840, 2,421,977 tons. Of the exports to foreign countries in 1841, 1,010,143 tons were in British shipping—484,424 in foreign shipping. Of the foregoing countries we send coal to Sweden, Norway, Denmark, Prussia, the United States, and the Philippines, import more in foreign than in British ships. The United States imported in one year 15,448 tons in British, and 30,022 tons in foreign ships. The exports to British possessions, in the same year, were 218,338 tons in British, and 619 tons in foreign shipping.

THE NEW TARIFF—EXPORT DUTY ON COALS.

The following statement of the effects that are expected to be produced on the English coal trade by the proposed tax of 4*s.* per ton on coals exported, and reasons for opposing the same, are worthy of attentive perusal. “The several statements recently submitted to the public have clearly demonstrated that the export trade in coal is one of very recent growth, and that its rapid extension since 1834 has been owing to the repeal of the previously existing duties. The proprietors of those collieries whose coal is chiefly exported, seeing the demand that has followed, have, under the fancied protection of the law of 1834, expended a large capital in opening out their collieries. An entirely new coal district has been recently called into existence, and a public harbour lately constructed at Workworth, in Northumberland, at the expense of the owners of colliery works, which would never have been undertaken but under the sanction of the law of 1834. If the effect of this proposed measure was such that the tax could be realised to the revenue, the coal owners would have no right to complain; but it must be considered, when all the facts are fairly stated, that the real effect of this tax would be, not only to disappoint the expectations of the revenue, but to destroy this important and increasing industry at the same time. This assumption will not only be amply demonstrated by reference to the state of the export trade in coal, before and after the repeal of the duty in 1834, but a glance at the history of the coal trade in other countries, under the existence or the absence of import duties, will still more clearly demonstrate it. It should be recollected that England is not the only country from which the continent of Europe can draw a supply of coal. England has the advantage over other countries, inasmuch as a great part of her coal lies to seaward. Notwithstanding this, the greatest rivalry now prevails in foreign markets between the English and Belgian coal, besides which there is the great basin of Saarbrück, in Rhinish Prussia, from whence a large supply is now drawn, both by France and Germany. Again, both in Belgium and Rhinish Prussia, coals are brought to bank at a cost equally moderate with that of England, and the proposed tax will more than compensate those collieries for the single advantage possessed by England in her seaboard. It appears from Parliamentary returns that the quantity of coal exported in the year 1840 amounted to 1,606,313 tons; of this quantity one-fourth part, or 394,954 tons, was shipped to France alone, while in 1838 the total quantity exported from England, including the colonies, did not exceed 355,000 tons. A reference to the facts connected with the past progress of the French coal trade, as influenced by import and discriminating duties, will fully confirm the opinion that any, the slightest, tax on coals exported will cut off at once one-fourth of our entire exports, independent of similar results which may be expected in regard to other countries. In 1788, before the French Revolution, English coals were admitted into France on payment of an import duty of 6*s.* 11*d.* per ton, while Belgian coal was subjected to a duty of 10*s.* 1*d.* per ton. The quantity of English and Belgian coal admitted in 1788, was—English coal, 184,773 tons; Belgian coal, 51,619 tons.

“After the peace in 1814, and on the opening of the Canal of Condé, the French Government, with a view to exclude English coal, and favour those of Belgium, placed an import duty of 1*s.* 9*d.* on the one, and 2*s.* 9*d.* on the other—which discrimination continued up to the year 1834. During this period the twenty years' average annual imports of English coal into France did not exceed 30,000 tons, while the quantity of Belgian coal which entered France had increased from 90,000 tons in 1813 to 620,170 tons in 1834.

“In 1834, simultaneously with the abolition of the export duty in England, the French import duties were remodelled, and the following table will show with what rapidity the English coal trade has developed itself in France, when freed on the one hand from a tax on exportation, and on the other by the equalisation of import duties.

QUANTITIES OF COAL, OMITTING FRACTIONS, IMPORTED INTO FRANCE FROM FOREIGN COUNTRIES, FROM 1834 TO 1840.

	English tons.	Belgian tons.	Saarbrück tons.
1834	48,000	620,100	78,000
1835	98,000	615,100	90,000
1836	169,500	715,800	113,900
1837	222,600	788,400	132,900
1838	304,600	796,400	135,100
1839	340,300	740,900	156,300
1840	394,900	N. returns	No returns.

* Add to tons 15 lbs. to equalise the quintal metre to English weight.

“By the foregoing statement it will be seen what are the consequences likely to result to English enterprise under the proposed coal tax. Under the influence of the same state of things as is now sought to be re-established, the Belgian French coal trade increased from 90,000 tons in 1813 to 620,100 tons in 1834, and ultimately to 740,900 tons in 1839, while the English French coal trade, which was in 1788, 184,000 tons, did not average after the peace, from 1814 to 1834, more than 30,000 tons annually, but since 1834, under a new modification of duties on both sides, has increased from 48,000 tons in 1834 to 394,900 tons in 1840. To this may be added the development of the French coal business under the exclusive systems that were in vogue from 1814 to 1834, the total produce of French coal mines being, in 1788, 225,000 tons; in 1814, 788,300 tons; and, in 1839, 3,133,300 tons.

“It is evident that the proposed tax will give an increased stimulus to the working of coal mines in France its full, and which enjoys in no less than fifty departments. And further, it will be found that, without offering any equivalent to the revenue, it is calculated to ruin our foreign export coal trade, and seriously affect the multifarious employments and capital connected therewith.”

GENERAL MEETING OF THE MINING INTERESTS.

A numerously-attended public meeting was held at the Town Hall, Leeds, on Monday last, the 23d inst., for the purpose of receiving from the deputation lately appointed at the Redruth meeting a report of their proceedings, and especially of their interviews with the Board of Trade. Among the gentlemen present were J. H. Tremayne, J. T. Trevelyan, J. T. A. Roberts, J. Carter, M. Williams, T. S. Bolitho, A. Fox, W. Williams, J. Vivian, E. Ley, J. S. Eysa, W. Carno, E. C. Carno, R. Pearce, C. K. Vigers, W. Bolitho, W. Bolitho, jun., P. Williams, W. H. Vine, R. Taylor, S. Davey, J. Batten, R. R. Broad, J. Mitchell, R. Mitchell, J. Harvey, J. Hayward, and T. Trevelyan, Esq., Messrs. Newton, Hemmings, James, &c.

J. H. TREMAYNE, Esq., in the chair.

The CHAIRMAN regretted that some one unconnected with the committee had not been appointed to the chair, but, by their favour, occupying that position, it was his duty to state, what they all knew from the advertisements, that it was the wish of the deputation to make a report of circumstances connected with the business for which they were appointed. Mr. Trevelyan, as chairman of that committee, would state, in detail, what had passed. He was sorry to say the circumstances would be found more unfavourable than they had expected when they met at Redruth. After all he had read and heard, and after all that had been hinted and stated, and all the assurances that had been excited and printed, he must, standing there as an individual, express his unqualified opinion that on deputation could not more favourably, more honourably, and more entirely for the interests of this country, than their deputation had done, collectively and individually. That was his undoubted opinion, whatever may have been stated to the contrary. As to the circumstances under which they now met—certainly unfavourable circumstances—he took the liberty on a former occasion of stating what was their course in 1837, when the question of foreign coals was first started. He stated that they, with one voice, then attempted to prohibit their admission altogether. A deputation, although headed by Lord Falkland, had entirely failed. They pressed for prohibition. He was told immediately afterwards, by an authority he could not doubt—the late Mr. Davies Gilbert—that he well knew that if they had contented themselves with protection, in the shape of duty, they might have had that to a very large extent. What would have been the consequence of so representing the great produce of the Cornish and other mines, it was not for him to say. They knew that foreign coals had been many years admitted into this country for the purpose of being smelted and re-exported, and that the quantity imported now was equal to 10,000 tons of copper, which was smelted in bond, and afterwards exported. It was now vain to think of stopping those mines, or at all success fully impeding their progress. Their produce would come here, and the only question this meeting had to consider was, whether it was not fair that they should pay for the indulgence now proposed for the first time to be granted them—that of moving British copper in the home market—whether they should not pay for the convenience of having our coals and being smelted here, by so large a duty as Parliament can impose consistently with the great object of Government—that of having all the coals of the world smelted in this country? That would be considered, in the subject this meeting would have to settle—whether they were satisfied with what the Government had done, or whether they would propose to have the duty on foreign coals increased?

Mr. TREMAYNE, who was greeted with loud cheers, said, having had the honour of being chosen chairman of the committee appointed at Redruth, he would state, that they had met at Leeds the following week, and had come to certain resolutions on which they founded a memorial, a copy of which he held in his hand. The deputation, proceeded to town, and the day previous to their proceeding to the Board of Trade they called on Sir Charles Lemon, who had been kind enough to procure them an interview

with the greatest part of the Cornish Members and some other gentlemen, for the purpose of discussing the subject. On their arrival at Sir Charles Lemon's, they unfortunately learned that from the time of their meeting at Redruth, to that of their arrival there, a new tariff had come out much more alarming to them than the former one, inasmuch as the duty intended to be proposed was much diminished, and that by that tariff, low produce coals were to come in at 35*s.* per cent. The new tariff having taken them completely by surprise, they requested to be allowed to present another memorial, that they might notice the effect which the low price coals would produce on this country, coming in at so low a duty; because they considered that all the poorer ores, thrown by for many years, would now be brought here. That was granted them, and they had no reason to complain of the reception they met with, because every attention was paid to their representations, and he thought he never heard stronger evidence given to establish the fact that there was no chance of their driving out the foreigner from smelting ores in this country. Mr. M. Williams was examined a long time, and after having given them vivid evidence, they committed his opinions to writing; and he (Mr. Trevelyan) thought they had established their case. With regard to tin, Mr. Bolitho and Mr. Carno underwent a long examination. With regard to china-clay, manganese, and some other semi-metals, a discussion took place. The answer of Mr. Gladstone was, that it was not their intention at all to let poor people suffer anything by the duty they had put on; nor was it, in fact, his intention that the low duty on foreign ores should injure them (the interests represented by the deputation), because he thought that by bringing home these ores they should employ a large number of smelters. But they (the deputation) proved that for every smelter thus employed they must displace a number of miners. In consequence of their leaving things then unsettled, for the purpose of putting in another memorial, they collected what evidence they could regarding the price of coals abroad and at home, and a vast deal of other evidence, the result of which would be read in a second memorial, which before they left town they also presented. The memorial he was now about to read was prepared in consequence of the tariff first published. The other memorial was to meet the new tariff. But he was sorry to say it did not appear that the least attention had been paid to anything they represented; for, in fact, another tariff had come out, and in it no attention had been paid to the British miner. On the contrary, the first tariff was more favourable than the other two. He was sorry to say there appeared to have been private influence at work, which they had no means of rebutting. The clearest proof in the world that their mines had not had a fair and proper consideration, was, that when the first tariff was brought into the world, before their complaints were heard, another was proposed; and before their complaints were attended to, a third came out, in which not one single favour was granted to them—but the contrary. Mr. Trevelyan quoted the duties proposed by the last tariff, and proceeded—The fact was, that, from the first time when a law was proposed in favour of smelting foreign ores in this country, the Government had always given them to understand—and he was the first person who waited on Mr. Herries on the subject—that they could not grant a prohibition, as that would injure the foreign miner, inasmuch as they had allowed him to build smelting-houses in this country. The foreign miner had laid out his money on the faith of an Act of Parliament, and therefore ought to be protected. It was always said by the Government, to the home producers, “we will give you a fair protection; but the difficulty is, we don't know what to give; if we give you too much the foreign miner will be driven abroad to smelt his ores.” They had fallen in with those views, and had said to the Government they did not want to drive the foreign miner abroad, they only wanted a fair protection for the British miner. Now, it was quite clear that the Government could have no fear now of driving the foreign miner abroad to smelt his low produce ores; the foreign miner had laid his produce abroad at 10*s.* a-ton less than the ore of this country made in this country; and, therefore, if the foreign miners, and the different companies of foreign mines, had not availed themselves of the opportunity of smelting ores abroad, but had rather paid the 10*s.* a-ton for the English market, he said, if they paid the same difference now, to have the benefit of the English market, and of the Indian market, it would be a great boon to them; instead of which, the duties were what he had read to them. But what was most appalling was the quantity of low price ores that would come in at the low duty, because they had been collecting great quantities of ores on the banks of their mines, which would come in and overwhelm the Cornish mines at once; therefore there was no pretence for that being done. The amounts of copper coming from abroad were quite frightful; and, besides, only give them encouragement in Cornwall and the South-west parts of Devon, and as much copper could be raised as was required in this country. The great object was to put on a duty on copper, without leading to any sliding scale of copper, because it would lead to a vast deal of trickery, and the introduction of low price ores, which would entirely overwhelm this country. Mr. Trevelyan now read a copy of the first memorial; and then said, in consequence of the new tariff which came out before they reached London, which they thought a most extraordinary thing, they laboured during the following week as hard as they could to get further information, and in about ten days they presented another memorial, which would be read to them by another member of the deputation. In the meantime, he would only observe on those ores which they had so much dread of, to show that it was morally impossible to contend with them in this country. Mr. Trevelyan here quoted from a printed paper, which he said was not anything got up in Cornwall, but was handed about London for the purpose of getting up a company to work the foreign mines in consequence of the proposed tariff. In order to get up that company, the profits of the Cornish, and Hastings, and other mines were stated in an appendix, showing the immense riches of those mines, where about twenty men would raise as much ore in the same time as they could raise with 1000 in the Pwery Coombs. All the different mines are here given; and there was a long statement showing the produce of Cornish mines for four years, and the amount per ton; and also the amount of the Cornish mines; he thought this would satisfy every miner that the increase was perfectly frightful. In 1838 the quantity from Cornish was 5925 tons; in 1839, 7336 tons; in 1840, 12,354 tons; in 1841, 20,799 tons. The whole amount of money which was divided by the Cornish Company during the last year was 120,000*l.*—that was the whole amount of profit; he would not say about division, because it was stated they divided and made a surplus. From the Hastings mines, during the last six months, or stated as a fact they had divided 34,708*l.* 8*s.* 5*d.*; and there was a scale to show what the Cornish ore sold for at tickings, and what those ores sold for at tickings. The copper produced from those ores sold for 10*s.* a-ton under cost, and, notwithstanding, the profits were most appalling. In Cornwall, the price in 1839 was 5*s.* 17*s.* 1*d.* in 1840, 5*s.* 7*s.* 6*d.* 1*d.* in 1841, 5*s.* 6*s.* 1*d.* He did not make the price quite so high, but he took his calculations from this paper; supposing the ore did actually sell for as much, he was now enabled to state that the best mines they had in Cornwall did not make one-ninth profit. On an average of three years, the best of their mines did not make more profit than 12*s.* 10*d.* a-ton, about one-ninth of the whole return; whereas the Cornish and Hastings mines had made a clear profit of 5*s.* a-ton, being very nearly the amount of the whole value of the Cornish ores altogether. He, therefore, thought that unless they had a better protection from Government than the last tariff gave them they were in a most fearful state. He need not read any more from this paper, but for the benefit of miners he should send them about the country as soon as possible. He had hoped to be able, on that day, to state the whole of the expenditure and receipts of the mines in Cornwall, but there were a great many returns he had not yet been able to get; he would just read a few lines to show the value of the Cornish mines in the labourer, the manufacturer, and the merchant; for the last three years, as far as he had returns, and he had not half the mine yet, though, perhaps, more than half in value, the cost of labour was 1,335,136*l.*, and of materials 666,235*l.* As soon as he could get in the remaining returns, he should send them the whole in such a shape as would render it a very valuable record. He now thanked those gentlemen who had favoured him with returns, and he hoped he would soon have those that were wanted, because they were only for public use, to establish the case. They would show that the money spent here was much better spent than in any other way. If ten times the amount of money were sent out to Cuba, it would not do that good which was done here in the way he had already stated.

Mr. JAMES CARNO began by speaking of the first meeting of the deputation with the First Lord of the Treasury, and the President, and Vice President of the Board of Trade. They (the deputation) were fully aware it was useless for them to say anything against the principle of the tariff,

injury on the great mining trade of Cornwall, on which an large portion of our population depended. He should most cordially support the proposition of Government.—**Mr. C. B. GILLES** felt that the producers of every article in this country were entitled to make some money in the principle of free trade; and he should be ashamed of himself if he were not prepared to make his share of the sacrifice. Though the proposed duties might be prejudicial to the mining interests, they would be of great advantage to the great body of the consumers of this country, and the people were so much interested in the adoption of free trade principles as to put the country of Cornwall.—**Mr. J. E. VIVIAN** begged that care might be taken by the Government that no injury be done to the mining interests in Cornwall by its measures.—**Mr. FARRAR** thought the experiment was very hazardous, for if it failed there were some steps they could never be brought into play again.—**Mr. TUCKER** having explained the committee divided.—For the resolution, 143; for amendment, 7.—Majority, 136.—The copper or brass wire, copperas, crystal, glass, and iron (ore, pig, and from British possessions).

On the question that iron bars (unwrought) be subjected to a duty of 1*l.* the ton (foreign), and 2*s.* 6*d.* (colonial), **Mr. HUME** altogether objected to the imposition of any duty on unwrought iron. Even the small duty of 1*l.* the ton would be sufficient to injure the home manufacturer competing with foreigners.—**Mr. GLADSTONE** said that the producers of the superior kinds of iron claimed to have protection in any other class of producers.—**Mr. PARKER** said, during the eight or nine years he had been in Parliament, there had been scarcely a year in which his constituents the manufacturers of the highlands of Scotland suffered, but not mentioning the Board of Trade for the reduction of the duty on unwrought iron.—**Mr. FARRAR** had the satisfaction of informing the hon. gentleman that the Board of Trade had consented to take off one-third of the existing duty.—**Mr. PARKER** hoped that next year they would consent to its total abrogation.—**Mr. LABOUCHERE** expressed himself in favour of a further reduction than was proposed by the Government.—**Mr. VILLIERS** condemned it as a most unwarrantable protection.—**Mr. M. PHILLIPS** said, that every iron manufactory in the country was interested in the reduction of the duty on iron.

The remaining articles of the schedule were then read and agreed to, when the CHAIRMAN reported progress, and the House adjourned.

REMARKS ON MACHINES RECIPIENT OF WATER-POWER

MORE PARTICULARLY THE TURBINE OF FOURNEYRON.
BY PROFESSOR GORDON, GLASGOW.
[From the Transactions of the Institution of Civil Engineers.]

Notwithstanding the diminished importance of water power since the almost universal application of the steam-engine, some situations may still be found, in the mining districts of Cornwall, of Derbyshire, and of Cumberland, the Highlands of Scotland, and generally in the districts comparatively destitute of cheap fuel, where it is desirable to render falls of water available. The theory of water-power as it now stands may be announced in general terms thus:—"The mechanical effect obtained is equal to that of the moving power employed, minus the half of the *risée* which the water loses on entering the machine, and minus the half of the *écouée* which the water possesses when it quits the machine." Bernoulli recognised the second cause, and soon after, Euler, the first. Borda in his *Mémoire sur les Roues Hydrauliques* in 1762, gave the proposition in precise and general terms; and when he concluded that to produce its total mechanical effect—"the water serving as moving power must be brought on to the wheel with impulse, and quit it without velocity." This principle being admitted, the circumstances next to be considered are—the height of fall, the supply of water, and the nature of the work to be done. These positions being laid down, the author proceeds to examine the relative efficiency of water-wheels of various constructions. The undershot-wheel acted upon by the velocity of the water was confined in a rectilinear course, or when hung freely in a stream; in the former case the efficiency of the machine is equal to 33 per cent., or nearly one-third; in the latter the ratio is 42 per cent., or about two-fifths.

The breast-wheel is generally applied to falls of from four to eight feet; in these the efficiency reaches as high as 60 to 65 per cent. of the mechanical effect of the fall of water. The buckets being filled to two-thirds of their capacity their velocity is seldom less than from seven to nine feet per second. The consideration of this wheel led Fournet in 1804 to the invention of the "undershot-wheel with curved floats," the efficiency of which has been found equal to from 65 to 75 per cent. The velocity of this may be 55 to 60 of that of the efficient water—a velocity equal to that due to nearly the whole height of fall; hence the efficiency becomes "about double that of the ordinary undershot-wheel." This wheel has not been much employed in Great Britain although frequently used in France and Germany. The overshot-wheel is most generally employed in Great Britain for falls beyond ten feet in height, and some excellent examples occur for work of every description from rolling iron to spinning silk. Its efficiency averages 60 per cent., but as rises as high as 82 per cent. The economical use of water as a moving power, varying in particular cases, rendered desirable the discovery of a receiver capable of general application, in all circumstances of height of fall, quantity of water, and amount of work to be done; and, after intense study Fournetron produced the turbine, the peculiarities of which form the subject of the paper. The imperfect horizontal water-wheels which have been used for centuries in the mountain districts of central Europe, and in the northern Highlands, are mentioned; there are noticed the experiments of M. M. Tardy and Poncelet, and the allusion by Borda to horizontal wheels; then a general description is given of the numerous experiments made up to the year 1858, when M. Bardin constructed wheels in which the water was received at the circumference of a vertical cylinder, descended in conduits, placed in a blind form round the surface of the cylinder, and made its escape at the bottom; the efficiency of these wheels was stated to be 75 per cent., but no exact experiments were ever instituted. The defects in all the previous machines led to the invention of the turbine as it is now designed by M. Fournetron; its construction may be compared to one of Poncelet's wheels with curved buckets, laid on its side, the water being made to enter from the interior of the wheel, flowing along the buckets, and escaping at the outer circumference; centrifugal force here becomes a substitute for the force of gravity.

The mechanical construction of the turbine is then given, and its action is described. The water, when admitted to the reservoir, rises to a certain level, exercising a hydrostatic pressure proportional to the height of the column, and on the sluice being raised it escapes with a corresponding velocity in the direction of the tangent to the last element of the guide curve, which is a tangent to the first element of the curved buckets; the water passing without shock upon the buckets at every point of the inner periphery, causes the wheel to revolve, then passes along the buckets, and escapes at every point of the outer periphery, by which arrangement the size of the machine, even for a large expenditure of water, is kept within narrow limits.

The advantages of the turbine are stated to be—1st, that they are, with advantage, applicable to every height of fall, expending quantities of water proportional to the square root of the fall, their angular velocity likewise proportional to these square roots; 2d, that their net efficiency from 70 to 75 per cent.; 3d, that they may work at velocities much above that corresponding to the maximum of useful effect, the useful effect varying very little from the maximum nevertheless; and, 4th, they work considerable depths under water, the relation of the useful effect produced the total mechanical effect expended not being thereby notably diminished. These advantages are stated to have been realised in the extensive practice of M. Fournetron, of M. Bressat in Saxony, and of Herr Casitzsch in Silesia, as well as other engineers.

A comparison of the theory and practice of the construction is then instituted, and the following conclusion is drawn:—"That if one turbine has been constructed which works well under a known fall, expending a volume of water exactly measured, this turbine would serve as a type for all others. Knowing the fall and the volume of water to be expended, the turbine would be made similar to its type. Its linear dimensions would be those of the one, directly as the square roots of the volume of water, and inversely as the fourth roots of the heights of fall. Its angular velocity would be to find the type, directly as the fourth roots of the cubes of the heights of fall, and inversely as the square roots of the volumes of water. These principles were first made manifest by M. Clesche, of the Ecole des Mines.

A general review is then given of most of the turbines erected by M. Fournetron at Font-ave l'Orgueille, at Franche, at Niederbrunn, and at Leval, on which last were tried the experiments which completely established the relation of the turbine as an applicable machine. The details of these experiments are given, whereas the mean results appear to be, that the height of fall being 3*ft.* 6*in.*, with an expenditure of 30 cubic feet of water per second, the efficiency was = 0.71; of 63 cubic feet = 0.73; of 79 cubic feet which it was constructed) = 0.82; of 126 cubic feet = 0.83; of 144 cubic feet = 0.86. These experiments were tried by the application of Prony's dynamometer to the vertical shaft of the turbine itself.

Asquith's position for employing the power of one branch of the flow on upon turbines, to replace the wheels at the Font-Nidre Dam, then giving about 3000 horse power for supplying Paris with water, is then noticed, as also the results of experiments with very low falls—showing that, for a fall of 3 feet 6 inches, the efficiency of the turbine was = 0.71; of 4 feet = 0.74; of 10 inches = 0.78.

The turbines at M. Bressat and M. Bressat are mentioned, to see the full extent of these machines constructed by other engineers, and the paper closes with an account of a turbine at St. Wendel in the Black Forest, the height of the fall is 343 feet, the quantity of water 1 cubic foot per second, and the reported efficiency from 85 to 90 per cent.

The following dimension which followed the reading of Fournetron's paper will be given in a subsequent Number.]

IMPROVED METHOD OF DRAINING ORES.

Among the patents issued during the present month, we find one for the solution, taken out by Mr. C. C. Gordon, of N. Carolina, U. S. A., for an improved method of draining ores, and extracting metals or materials from ores.

PROCEEDINGS OF PUBLIC COMPANIES.

ST. JOHN DEL REY MINING COMPANY.

The twelfth annual general meeting of the proprietors of the above company was held on Friday, the 27th inst., at their office, 8, Tokenhouse-yard, G. D. POWERS, Esq., in the chair.

The advertisement convening the meeting having been read, the CHAIRMAN read the directors' report, as follows:—

REPORT.

Since the last annual general meeting of the proprietors of this company, a special meeting of the proprietors was held on the 20th July, which was attended by Mr. Baring, the superintending, on his arrival from Brazil. At that meeting the following particulars were communicated by Mr. Baring, in relation to the state of the mine, and the progress of the work:—That the supply of ore in the mine appeared to be inexhaustible; that there were no sufficient grounds on which any expectation could be formed of an improvement or otherwise in the quality of the ore in the bottom of the mine, although, in some of the upper stops (the Chancelos) there was reason to expect an improvement; that during the first four months of 1841 it had been necessary to submit to the stamping of a low quality, in consequence of the peculiar position of the mine works—It being necessary to complete the installation of a pump-shaft in the Gamboa Mine, and to prosecute the sinking in the main shaft; that when the sinking in the above two mines should be completed, he expected the produce would rise to 7000 or 8000 cits. per month; that he expected the hauling-machine would be finished in October or November, by which a saving in expense would be effected of about 1000 cts. per month. These expectations appear, by the advice subsequently received, to be in progress of being realized. The hauling-machine went to work, on one side, on the 24th December—on the other on the 28th January, and the produce, which, for the first ten months of the year 1841, from January to October inclusive, had averaged only 3730 cits. per month, has risen, in January, 1842, to 7014 cits., with every reason to hope that thenceforward that would be found to be the minimum rate of monthly produce. The monthly produce of gold at Morro Velho during the past year has been as follows:—January, 602; February, 629; March, 603; April, 1927; May, 1876; June, 1807; July, 1833; August, 1790; September, 1833; October, 1809; November, 1712; December, 1681; or a total for the year of 20,243 cits., equal to 601 lbs. 1 oz. Troy. The produce of 1840 was 24,000 cits., showing a falling off in the past year of 3561 cits. The ore stamped in 1841 was 21,715 tons—slightly exceeding that of 1840 in quantity, but in the quality there appears a diminution of 95 per cent.—the year 1840 having given an average value of 37.10th cts. per ton of ore, while, in the last year, it averaged only 37.6.060th cts. per ton. This falling off in the value of the ore has been occasioned by the necessity which existed of temporarily abstaining from working the richer parts of the mine during the time occupied in sinking and bringing it again in good stopping order, as already explained by Mr. Baring, and also in the annual report from Morro Velho, which will be found in an appendix; but now that the object of bringing the mine into regular working order has been attained, the richer stops of the United Mines will gradually come into use, and it is fair to expect that the average value of the ore in the present year will show a more agreeable result than it has done in that which has just expired. As a natural result of the diminished produce of gold, the year 1841 has not been a year of profit at Morro Velho—the establishment having barely paid its own expenses, as appears by the following statement:—

The amount standing at the debit of the Morro Velho estate, in the balance-sheet of last year, was	£494,747 7 11
The amount carried to the debit of the account since, has been for	£2,700 12 8
Loss from Brazil, and other disbursements	2,501 1 8
Less included therein—payments for negroes	2,700 12 8
And to its credit for produce of gold	£274,791 11 9
Excess on receipts over expenditure	£22,250 2 8

Which sum has been transferred to the credit of the profit and loss account, leaving the balance standing at the debit of the Morro Velho estate in the balance-sheet of 1841, £494,747 7 11.

Negroes—£2,501 1 8

£274,791 11 9

£22,250 2 8

£494,747 7 11

£2,501 1 8

£274,791 11 9

£22,250 2 8

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£274,791 11 9

£22,250 2 8

£494,747 7 11

£2,501 1 8

£274,791 11 9

was evidently 10,000 cits. more on one account the last year than in the preceding year.—The CHAIRMAN stated that the amount would vary. They might send out more hands one year than another.—A PROPRIETOR wished to see the books belonging to the company, he understood every proprietor could do so, but he was refused yesterday, until the secretary could obtain the consent of the board.—The CHAIRMAN stated that the secretary was perfectly right.—Mr. BOWMAN then stated he would like to have some details, to which the CHAIRMAN replied that it would be waste of time.—Mr. BOWMAN stated it could be no waste of time for the directors to put the accounts in such a shape as to satisfy the shareholders. What was the use of their meetings, if, when a difference of 10,000 cits. appears, a proprietor was not allowed to know how it arose? The expense of sending out people and bringing them back ought not to be set down as salaries, and should be kept as a separate account.

A PROPRIETOR then inquired if the want of water, as stated in the last account from the mine, would be of such vital importance to the company as was set forth.—Mr. HARRISON stated no interruption had as yet taken place, and he could not think there was any reason for the dismal anticipation that had been expressed in the report alluded to. The thing was, that the parties in the Brazil wanted another dam, and, as the directors were a little against it, they had made out a strong case, and now the dam was progressing; the expense would be about 5000 cts., and it would guard against a want of water.—A PROPRIETOR thought it a very prudent course.

Some conversation then ensued upon technical matters, and the treatment of the negroes, during which it was stated that the negro children had no further instruction than the "Padre Nostro," which was taught them by the "padre," and that the whole body of negroes attended church every Sunday.—A PROPRIETOR expressed a wish that some means could be found by which the negroes could have a chance of ultimate emancipation.—The CHAIRMAN stated that the blacks were much better off than the labourers in Europe, or the free native labourers in Brazil.—In reply to a proprietor, Mr. HARRISON said there was nothing objectionable in the present working of the mine, and that his plan was being carried out in every respect.—It was worked very fairly.—The CHAIRMAN hoped he was not too sanguine in expecting to declare a dividend in next November.

Mr. BOWMAN then got over a statement that was made in the last report, that there was a balance of 2763 cts. in January, and that there was some foundation in the hope of receiving a dividend, instead of which a call of 10s. per share was made, and he thought the proprietors ought not to separate without guarding against a recurrence of the same. The call, made as that was, without any explanation to the shareholders, had reduced the shares, so that, at last, they were worth next to nothing; they must provide against the directors making another call without first calling the shareholders together.—M. DONALDSON (a director) explained that the call was made to pay for the slaves.—Mr. BOWMAN observed, that he did not expect a call, but a dividend.—The CHAIRMAN stated that the proprietors had no right to fetter the directors, who were obliged at times to incur liabilities, and the right of making calls was their only security. They did not think it worth their while calling the proprietors together every time 1000 cts. was wanted, but advanced the sum. There would now be no necessity for another call, as they owed nothing. He thought it a most unnecessary discussion.—Mr. BOWMAN contended it was not an unnecessary discussion; he paid his calls willingly, but objected to have calls made without any explanation as to the why and wherefore; every proprietor had a right to make a resolution to protect himself. He (Mr. BOWMAN) then moved.—That no call be made for the future without first convening a meeting of the proprietors.—A PROPRIETOR immediately seconded the resolution, but the CHAIRMAN declined putting it, stating that he would not put such a motion, and if the hon. proprietor were disappointed he might take legal advice upon the subject.—Mr. BOWMAN replied he would take legal advice.—The CHAIRMAN stated that the question could do no possible good, and only create differences between the directors and the proprietors, which ought to be avoided; to which Mr. BOWMAN replied that the conduct of the directors had already reduced the value of the property to nothing.

J. D. POWERS, Esq., was then re-elected a director, and, in consequence of G. V. DURAL, Esq., having gone abroad, Sir R. DOBSON was elected a director to fill up the vacancy, and A. LONGMAN, jun., Esq., was re-elected an auditor.—A PROPRIETOR then inquired if he might come to the office and examine the items of the expenditure, as there was one item amounting to 1190 cts. 7d. for salaries to directors, secretary, and clerk, rent, office expenses, postage, stationery, advertisements, and incidental expenses, all classed in a lump.—The CHAIRMAN replied in the affirmative, and stated that they had better prospects than ever, as last year they had 5000 cts. to pay for negroes, while now the company was free from all debt.

The meeting then adjourned, the CHAIRMAN explaining that he would put Mr. BOWMAN's motion, as the deed authorized the directors to call for money as required.

WEST WHEEL JEWEL MINING ASSOCIATION.

A special general meeting of the proprietors of the above association was held at their office, 23, Threadneedle-street, on Wednesday, the 25th inst., for the purpose of increasing the capital of the association, in conformity with the provisions of the Deed of Settlement.

J. HARRISON, Esq., in the chair.

The advertisement convening the meeting having been read, the SECRETARY read the clause of the Deed of Settlement under which the increase of capital may be made.—Mr. MORTON then moved, and Mr. SAMPSON seconded, the following resolution, which was carried unanimously:—

That the capital of the company be increased by the sum of 7000 cts., and that such increased capital be raised by further calls on the present shares, consisting of 3500 cts. to the extent of 25 cts. per share, such calls not exceeding 15 cts. to be made by the directors and committee of management, on, and when, they shall deem requisite, and in conformity with the company's Deed of Settlement, bearing date the 15th day of October, 1838.

The meeting then adjourned.

NATIONAL BANK OF IRELAND.

At the annual general meeting of the above bank, held at the office, 15, Old Broad-street, on Wednesday, the 25th inst., the directors' report showed that the business of the bank continued steadily to increase, the amount of undivided profits at Christmas, 1841, being 30,811 l. 10s. 3d. In the course of the discussion that ensued, a resolution was proposed, having for its object the appointing of auditors, also that the report should be referred back to the directors, for the purpose of having additional particulars added thereto, for the information of the proprietors, but which was opposed by the directors, the chairman stating that auditors were only wanted to be in a falling concern, and the hon. proprietor, seeing that the meeting was against him, withdrew the motion.—The report was then carried unanimously, and, after some further business, the meeting adjourned.

MINING CORRESPONDENCE.

ENGLISH MINES.

BOLTON MINING COMPANY.

May 23.—I beg leave to inform you that the lode in the 110 fathom level was in still about eight inches wide, and producing stones of ore. In the 100 fathom level west the lode is two inches wide, and worth 80 cts. per fathom; in this level next no alteration; the lode in the eastern stop, in the back of this level, is twenty inches wide, and worth 35 cts. per fathom; the lode in the western stop, in the back of this level, is twenty inches wide, and worth 35 cts. per fathom. In the sixty fathom level west the lode is eighteen inches wide, and worth 35 cts. per fathom; the lode in the eastern stop, in the back of this level, is eighteen inches wide, and worth 35 cts. per fathom; the lode in the western stop, in the back of this level, is fourteen inches wide, and worth 35 cts. per fathom. In the eighty fathom level west the lode is one foot wide, with stones of ore; the cross-cut at this level, to the north, is progressing in favourable ground; the lode in the stop, in back of this, is fifteen inches wide, and worth 35 cts. per fathom. The Flagstaff lode, in the seventy fathom level, west of Wall's shaft, is one foot wide, and intersected with ore. The lode in the sixty-two fathom level, east of Key's shaft, is small, and unproductive. In this level, west of Hinchley's shaft, the lode is eight inches wide, with a small proportion of ore. The tribals pillars are without important alterations.

May 24.—In the forty fathom level west the lode is about fifteen inches wide, composed of pure, massive, and ore, worth 150 cts. per fathom. The lode in the thirty fathom level west has not been taken down since the commencement. In the thirty fathom level east the lode is at present about one foot in width, and, although composed chiefly of pure and massive, is not without ore. In the twenty-five fathom level west the lode has not yet been taken down; the next report, however, will furnish particulars as to the character and quality. The tribals pillars, on the whole, are looking favourable, and some parcels of ore in now in active course of dressing.

J. H. HARRISON.

TREVELL MINING COMPANY.

May 23.—The lode in the forty fathom level east of engine-shaft is ten inches wide, producing some good ore. The lode in the thirty fathom level east of Williams's shaft is small and unproductive. The lode in Howard's shaft, under the thirty fathom level, is twenty inches wide, very good tribute ground. We have suspended sinking this shaft under the thirty until we get the flat-rod to work upon it from East Trevel Mining Co.

H. WILLIAMS.

J. MURDOCH.

TREVELL MINING COMPANY.

May 21.—Christie Shaft.—We have made but little progress in sinking this week. The seventy east is still disordered by a slide. The seventy west is two feet wide, producing some ore. The sixty east is one foot wide, kindly, with stones of ore; this level west is two feet wide, stones of ore, very kindly; the pillars generally are looking well. At Good Fortune the forty-four west is twenty inches wide, producing good stones of ore. The forty-four east is eighteen inches wide, worth about 60 cts. per fathom, and a good lode in the back. The thirty-four east is about four feet wide, and worth 75 cts. per fathom.

WEST WHEEL JEWEL MINING ASSOCIATION.

May 23.—The ground in Buckingham's engine-shaft, below the seventy fathom level, continues fair for sinking. The Seventy East, on the South Branch—Ground more favourable, and lode more promising for ore. The seventy east, on West Jewel lode, is eighteen inches wide, containing a branch of ore to the south. The Fifty-seven East, on the South Branch—Lode worth 60 cts. per fathom. The fifty-seven east, on West Jewel lode, is worth 120 cts. per fathom; and the lode in the mine, sinking below this level, is worth 90 cts. per fathom. The deep adit west, on this lode, is one foot wide, producing good stones of yellow ore.

S. LEAN.

TREVELL MINING COMPANY.

May 23.—In cross-cutting from the north to the south part of the lode, at nearly the extent of the forty fathom level, we find it to be about eight feet wide, of a very kindly nature, producing saving work throughout. In the northern cross cut, at this level, I beg to say that we have nothing new to report. You will perceive from the accompanying setting report that we set on Friday last nine tribute pillars, varying from 30 cts. to 100 cts. in the 11. We intend sampling this day week about fifty-five tons of upper ore. I am glad also to inform you that we are progressing favourably with the sinking of B. Key's shaft below the forty fathom level.

J. NIXON.

CORNBURGH MINING COMPANY.

May 23.—The ground in the engine-shaft, sinking below the sixty fathom level, continues a hard hill. In the eastern end, at the sixty fathom level, the north lode, although small, is kindly; it is composed of soft blue ore and spar, imbedded in a very congenial channel of ground. At this level, driving west on Chiverton lode, the prospects are encouraging; the lode is large, and carries a good branch of ore, from three to four inches wide. Looking at the run of ore over at the fifty fathom level we could not calculate on seeing the appearances on chiverton at the bottom, or sixty fathom level, as some, by any means; it now, however, causes us to think much more favourably of the western run, to see it striking more perpendicular in depth, should the lode we now have in driving be leading in to the branch. At the fifty fathom level cross-cut south we have not yet intersected any lode; the ground is favourable and congenial for lead. In Moray's shaft, sinking below the sixteen fathom level, the ground is much as formerly reported on, tolerable for this part of the mine; we have put a pair of men in the adit also against this shaft, from the back of the forty fathom level. At Clifford's, driving twenty-four fathom level east, on Chiverton lode, it is small, but producing a little lead. The sixteen fathom level is now far enough east as to be under Stacey's new shaft; we have commenced a cross-cut south, and, after driving about 600 fathoms, shall rise towards Naid shaft. The eight fathom level is still unproductive. We see but little variation in the tribals department from what has already been noticed to you. The new lode we are sinking on from surface being parallel, and situated about fifty fathoms north from Chiverton lode, is presenting a kindly appearance—sign about eight or ten inches. On Thursday last we sampled forty-six tons of lead ore, to be sold in London, on Saturday, 28th inst.

R. ROWS.

FOREIGN MINES.

IMPERIAL BRAZILIAN MINING ASSOCIATION.

Ganga Saca, March 4.—The mine report records the discovery of two auriferous veins in the south junction; in making a rise from the twenty-seven fathom level at Lyon's shaft to the surface these veins were met with, and showed good samples of gold in the water; the ore from the rise was sent to the stamps, and yielded tolerably well. In order to obtain more information, a cross-cut was driven north to the rise, from a level near Jennings's shaft, at the horizon of the twenty-one fathom level, and a level was commenced, and has been driven 75 fathoms west on the course of the veins. The most interesting circumstance in the discovery is, that these veins are three fathoms to the south of the south vein, and consequently south of any value which we have worked on in this part of the mine.

Gold Report.—Total gold raised from January 1st to February 10th, inclusive, 122 lbs. 7 oz. 8 dwt.

J. N. A. CHURCH.

BRAZILIAN COMPANY.

Cuba Branca, March 4.—I have to acquaint you with my return to this establishment on the 1st instant, and to report that I found the various works in hand advancing as rapidly as I could expect; some time, however, will elapse before they can be completed and all be in working order, and, until such is the case, we shall be subject to many ills and hindrances, and cannot hope for all a better produce. The plans of the different workings in the lode traversing that portion of the Serra of Itabira, which belongs to your property, have at length been completed—that is, as far as possible, and will be sent to you. I hope they will reach you safely, and be clearly understood. To Captain Williams's remarks upon them I do not say that I can add anything; it must be most evident to any one that they may all be most easily and cheaply worked, by a succession of levels upon the hillside line, which intersects them all, and affords the means of unwatering them, and extracting the stone, and consequently that a poorer quality stone, worked under such advantages, would return a very good profit; but we have all the reports in favour of Nos. 13 and 14 especially, being much richer than those of Cuba Branca, and the twelve fathoms which we have cleared on No. 8, or the Bala, we know to be so. I cannot just yet see any very clear enough to give an opinion as to the time when you may look for a St. Antonio gold report; you may, however, rely upon every exertion being used to send one. The gold extracted from the 1st of January to the 31st of March, both days inclusive, amounting to 144 lbs. 8 oz. 12 dwt. 14 grs. (arrived per Piquea packet), exclusive of 5 per cent. duty, will leave to mortgage. Gold return for the week to the 31st of March, 18 lbs. 2 oz. 17 dwt. 18 grs.; ditto, for the month of February, 69 lbs. 11 oz. 18 dwt. 18 grs.

W. CORNWORTH.

ST. JOHN DEL REY MINING COMPANY.

Morro Velho, March 9.—Produce for February 7810 cits = 75 lbs. 1 oz. 10 dwt. 12 grs., from 1988 tons of stone—37 cts. per ton; 334/18 cits. test of good lode; average of hands working twenty-eight days, 57-68. The yield for February was higher than it has been for a very long time, about 120 tons of inferior stone were picked out.

Mor.—Good sinking in Itabira—no change in any of the lode—ample supply of water.

Water.—The venation, or little spring, whose duration was in general ten days or a fortnight, has lasted now more than two months. The seasonal tank has been opened; on the 7th inst. its waters were exhausted, and the flooding stream alone coming home; the average decrease on the rate of the stamps since the 7th is 0.5 per cent.

Surface Works.—The venation went to work to-day, with a very small stream of water—it works beautifully; first charge put in, four cubic feet, was reduced to a very fine powder in one hour and a half; it was evident that this quality of sand was not sufficient, and the charge was gradually increased up to twelve cubic feet, which the stones work over very well. Hence tank is going on.

Reduction Report.—Very few stoppages have occurred this month, and our fifty cts. hands have been kept working at their full rate; they have also done good duty. The tanks have been of very great service. The use now of a better quality than they have been of late; the quantity was also good, so that the work was thrown aside for some future time. The return for February, 7810 cits., from 1988 tons of stone. The produce is in every respect a most satisfactory one; although it represents the produce of only 28 days, still it is the best we have ever had, and for which I consider we are to a great measure indebted to the tanks; they are now nearly empty, and there is still an appearance of rain I cannot hold out any hope to expect a continuation of so good a produce from the stamps until an immense amount of water takes place.

MINE ACCIDENTS.

Widgony Colliery, Newcastle.—On Wednesday week J. Charlton, of Coble Down, went to an ordinary and through having got upon the waggon, and immediately standing up while they were running; on their coming suddenly to a bridge the deceased came with great violence in contact with the web, by which his head was so frightfully fractured that he only lingered until the following morning.

Mile End Pit, Colliery.—An accident, which unfortunately proved fatal, happened to an old man named Hale, underground bossman of the Mile End Colliery, near Colliery. The poor fellow was standing at the bottom of the pit, superintending the miners, when a large stone became detached from the side and fell on him, breaking his legs and inflicting other serious injuries. He lingered in great agony till the following day, when death terminated his sufferings.

